REMEDIAL SITE ASSESSMENT DECISION - EPA REGION I

EPA ID: CTD981204209 **Site Name:** SUBURBAN EXCAVATORS **State ID:**

Alias Site Names:

City: CHESHIRE **County or Parish:** NEW HAVEN **State:** CT

Refer to Report Dated: 09/18/2003 **Report Type:** SITE REASSESSMENT 002

Report Developed by: START

DECISION:

- ☐ **1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:**
  - ☐ **1a. Site does not qualify for further remedial site assessment under CERCLA (No Further Remedial Action Planned - NFRAP)**
  - ☐ **1b. Site may qualify for action, but is deferred to:**
- ☒ **2. Further Assessment Needed Under CERCLA:**
  - **2a. Priority:** ☐ **Higher** ☒ **Lower**
  - **2b. Other: (recommended action)** Low

DISCUSSION/RATIONALE:

There is an observed release to groundwater and potential receptors. There is an observed release to surface water and impated receptors.

Site Decision Made by: DON SMITH

Signature: _____ **Date:** 02/20/2004

EPA Form # 9100-3

FINAL SITE REASSESSMENT REPORT
FOR
SUBURBAN EXCAVATORS
CHESHIRE, CONNECTICUT

Prepared For:
U.S. Environmental Protection Agency
Region I
Office of Site Remediation and Restoration
1 Congress Street, Suite 1100
Boston, MA 02114-2023

CONTRACT NO. 68-W-00-097

CERCLIS NO. CTD981204209
TDD NO. 03-05-0133
TASK NO. 6138
DC NO. A-3879

Submitted By:
Weston Solutions, Inc.
Region I
Superfund Technical Assessment and Response Team 2000 (START)
37 Upton Drive
Wilmington, MA 01887

Region I START 2000
Reviewed and Approved:

Thomas Cundell for Wayne Brown — 4/18/03
Site Leader — Date

Scott Rose — 9/18/03
Scott Rose — Date
Project Leader

Mary K. Gibney — 9/18/03
QA Review — Date

Work Order No. 20110-001-001-6138-70

DISCLAIMER

This report was prepared solely for the use and benefit of the U.S. Environmental Protection Agency Region I (EPA Region I), Office of Site Remediation and Restoration for the specific purposes set forth in the contract between the EPA Region I and the Weston Solutions, Inc., Superfund Technical Assessment and Response Team 2000 (START). Professional services performed and reports generated by START have been prepared for EPA Region I purposes as described in the START contract. The information, statements, and conclusions contained in the report were prepared in accordance with the statement of work, and contract terms and conditions. The report may be subject to differing interpretations or misinterpretation by third parties who did not participate in the planning, research or consultation processes. Any use of this document or the information contained herein by persons or entities other than the EPA Region I shall be at the sole risk and liability of said person or entity. START, therefore, expressly disclaims any liability to persons other than the EPA Region I who may use or rely upon this report in any way or for any purpose.

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Suburban Excavators
Cheshire, Connecticut

CERCLIS No. CTD981204209
TDD No. 03-05-0133
Work Order No. 20110-001-001-6138-70

INTRODUCTION

The Weston Solutions, Inc., Superfund Technical Assessment and Response Team 2000 (START) was requested by the U.S. Environmental Protection Agency Region I (EPA Region I), Office of Site Remediation and Restoration to perform a Site Reassessment (SR) of the Suburban Excavators (Suburban) property located at 1074 and 1076 South Main Street in Cheshire, Connecticut (CT) Tasks were conducted in accordance with the SR scope of work and technical specifications provided by EPA Region I. START completed a Site Inspection Prioritization (SIP) on 13 May 1997. No samples were collected as part of the SIP. The Suburban property was referred to EPA Region I by the Connecticut Department of Environmental Protection (CT DEP) on 15 March 2002. According to CT DEP, potential hazards to the environment in the form of possible groundwater contamination, resulting from former disposal methods of on-site operators, existed for the property. On the basis of information provided by CT DEP, the Suburban SR was initiated.

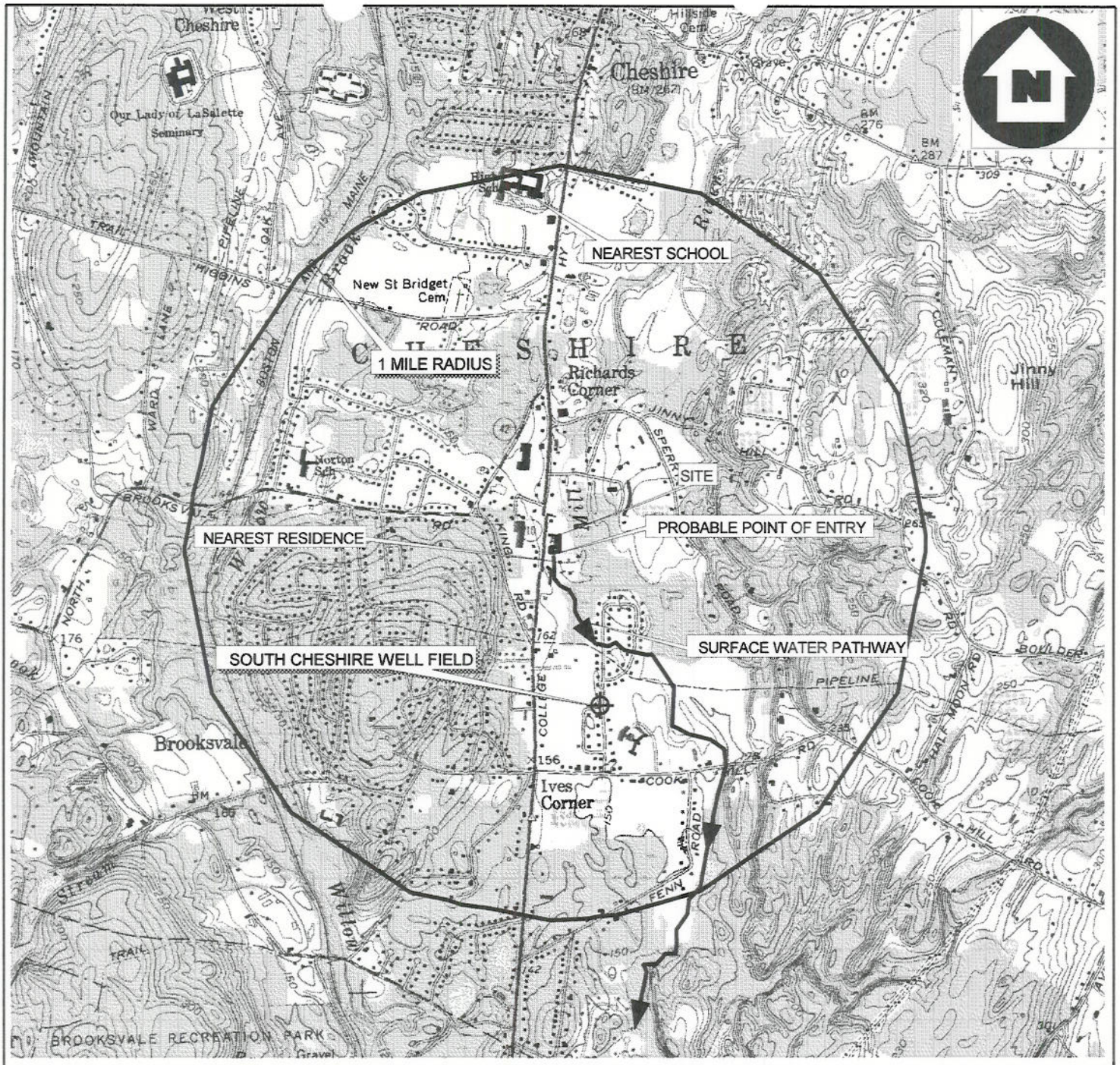
Background information used in the generation of this report was obtained through file searches conducted at the EPA Region I and CT DEP, telephone interviews with town officials, conversations with persons knowledgeable of the Suburban property, and conversations with other Federal, State, and local agencies.

This package follows the guidelines developed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA Region I regulations such as those under the Resource Conservation and Recovery Act (RCRA) or other Federal, State, or local regulations. SRs are intended to provide a preliminary screening of sites to facilitate EPA Region I's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.

SITE DESCRIPTION

The Suburban property is located at 1074 and 1076 South Main Street [listed in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database as 1074 South Main Street] in Cheshire, New Haven County, CT. The geographic coordinates for the Suburban property, as measured from its approximate center, are 41° 28′ 30.0″ north latitude and 72° 54′ 01.0″ west longitude (Figure 1) [1; 18; 42].

The Suburban property is comprised of two parcels located at 1074 South Main Street and 1076 South Main Street. The 0.42-acre 1074 South Main Street parcel, located east of South Main Street, is identified by the Town of Cheshire Tax Assessor's Office as Lot No. 170 on Map No. 78. The 1.57-acre 1076 South Main Street parcel, located east of Lot No. 170, is identified by the Town of Cheshire Tax Assessor's Office as Lot No. 171 on Map No. 78. Both parcels are zoned for commercial and residential use by the Town of Cheshire [5; 6; 7].



BASE MAP IS A PORTION OF THE FOLLOWING 7.5 X 7.5' U.S.G.S. QUADRANGLE(S):

Mount Carmel, CT. 1967 REVISED 1984.

0.5 0 0.5 1 1.5 Miles

2000 0 2000 4000 6000 Feet

0.6 0 0.6 1.2 1.8 2.4 Kilometers

QUADRANGLE LOCATION

SITE LOCATION MAP

SUBURBAN EXCAVATORS
1074 AND 1076 SOUTH MAIN STREET
CHESHIRE, CONNECTICUT

WESTON SOLUTIONS
Restoring Resource Efficiency
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE:
03-05-0133	R. HERMAN	2/6/03
FILE NAME: E:\ARC_APRS\START2\SUBURBAN EXCAVATORS.APR		FIGURE 1

The Suburban property currently has multiple owners and operators. Lot No. 170 is presently owned by Orazzan LLC and is leased and operated by Timberline Office Products, a retail business. Lot No. 171 and its assets are managed the U.S. Small Business Administration (SBA), the principal receiver for both InterEquity Capital Partners LP (InterEquity) and First Wall Street Small Business Investment Company LP (First Wall Street SBIC). Lot No. 171 is leased and operated by Napolitano & Wulster Professional Search and Placement (Napolitano), an executive search and placement firm [14, p. 5; 19; 20].

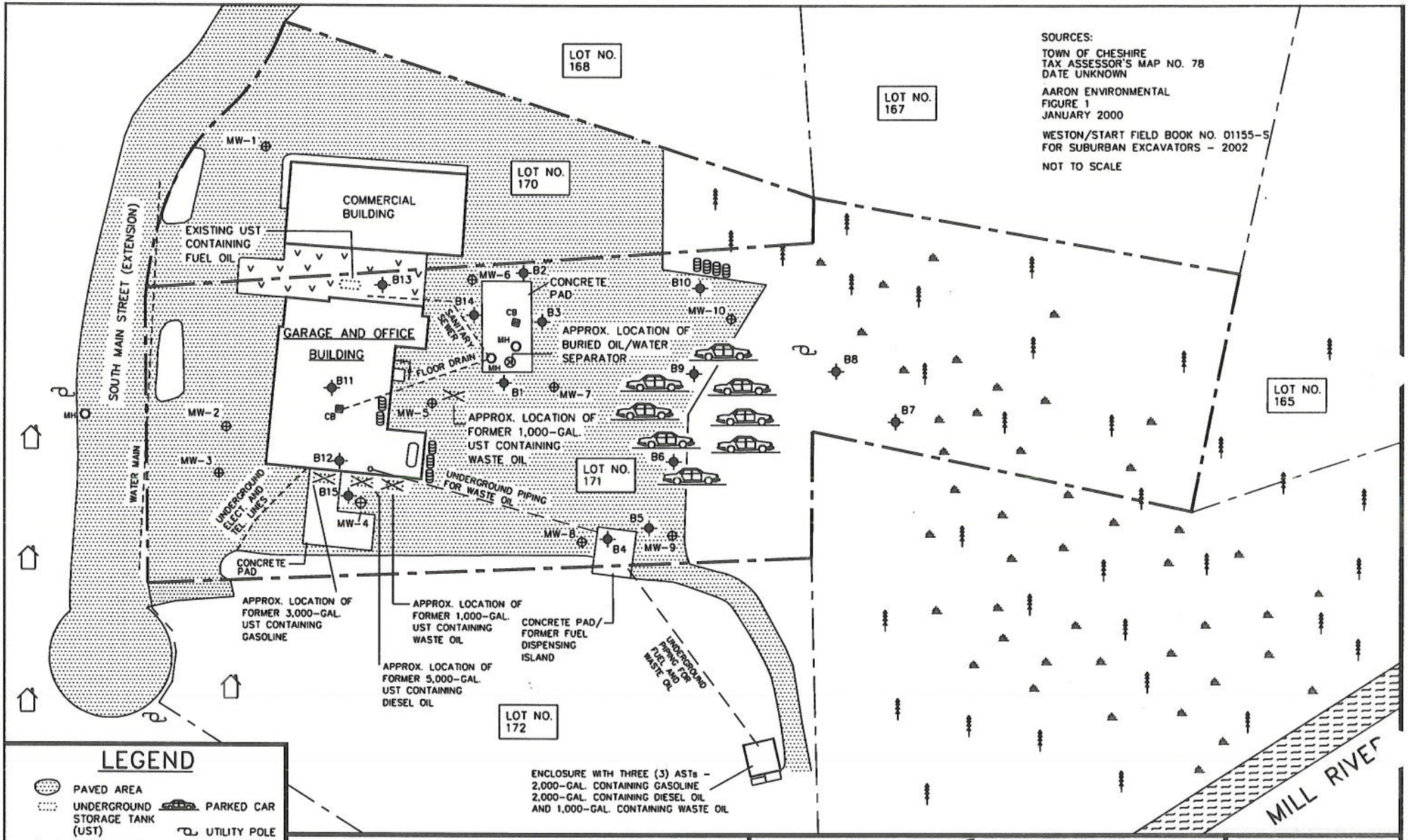
The Suburban property is located in a mixed commercial and residential area, approximately 3 miles south of the center of Cheshire. The property is bordered to the west by a shopping center; to the south by an extension of South Main Street; to the east by a residential property; and to the north by the Mill River and its associated wetlands (Figure 2). The Suburban property includes a 3,700-square-foot (ft^2), one-story commercial building partially surrounded by asphalt on three sides on Lot No. 170; and a 6,500-ft^2, two-story garage and office building, which is also partially surrounded on three sides by asphalt, on Lot No. 171. A maintained grass strip approximately 50 feet (ft) wide separates the two buildings. Wetlands are located on the northern portion of Lot No. 171. There are no fences or gates surrounding the property; therefore, the property is accessible to pedestrian and vehicular traffic (Figure 2) [5; 6; 11, p. 4; 12, p. 15; 14, pp. 5-11].

On 23 May 2002, START personnel conducted an off-site perimeter reconnaissance of the Suburban property as part of the Site Reassessment (SR). START personnel observed a one-story commercial building surrounded by asphalt on Lot No. 170 and a two-story garage and office building on Lot No. 171, which was also surrounded by asphalt. A portion of Lot No. 171, which is located north of the building, is currently sub-leased to a car dealership by Napolitano. Approximately 150 new automobiles were observed by START personnel on this portion of Lot No. 171. According to SBA, Napolitano provides a service to a local car dealer; the service allows the car dealer to park the automobiles on Lot No. 171. Based on available file information, a vehicle washing area was historically located on the property, north of the garage and office building on Lot No. 171. START observed a concrete pad north of the garage and office building on Lot No. 171. START observed four unmarked 55-gallon drums to the north of the concrete pad [14, pp. 5-16].

OPERATIONAL AND REGULATORY HISTORY AND WASTE CHARACTERISTICS

Property use of Lot No. 170 prior to 1977 is unknown. In 1985, a residential dwelling on the property was razed, and the current building was constructed. In 1988, Suburban purchased Lot No. 170 and used the building for instructional training and for storage of landscaping supplies. Property use of Lot No. 171 prior to 1956 is unknown. George and Gloria Richards purchased Lot No. 171 in 1956. Lot No. 171 was used by the Richards family for the storage, maintenance, and repair of excavation equipment [5; 6; 9, p. 3; 15, p. 2].

In 1981, during routine sampling of Well No. 2 of the South Cheshire Well Field, located 0.3 miles south of the Suburban property along Cooks Hill Road, trichloroethylene (TCE) was detected in a groundwater sample at 215 parts per billion (ppb). Production Well No. 2, a public groundwater drinking water supply well, is operated by the South Central Connecticut Regional Water Authority (SCCRWA) located in New Haven, CT [10, p. 2; 12, p. 5].



SITE SKETCH

SUBURBAN EXCAVATORS
1074 AND 1076
SOUTH MAIN STREET
CHESHIRE, CONNECTICUT

WESTON SOLUTIONS
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE
03-05-0133	S. ROSE	6/25/03

FILE NAME: S:\03050133\FIGURES\FIG2.DWG

FIGURE 2

On 8 July 1981, Suburban received a letter from the New Haven Water Company (NHWC), which stated that during an inspection of the Suburban property on the previous day, spilled oil was observed on the ground. According to the letter, NHWC personnel also observed an uncovered oil barrel. A copy of the letter was sent to CT DEP [9, p. 5]. The location of the oil spill was not included in available file information.

On 19 February 1982, CT DEP collected samples of a steam cleaning solvent (Klenzer) and a parts cleaner (Savosol) used in a vehicle washing area on Lot No. 171. CT DEP also collected samples of the discharged wastewater that was generated in the garage and in the vehicle washing area and discharged to a dry well located below the vehicle washing area. Reportedly, the 55.66-cubic-foot (ft^3) dry well was used from 1955 to 1982 [12, p. 4; 22]. Analytical results of the cleaner and the wastewater samples indicated the presence of 10 volatile organic compounds (VOCs) [11, p. 7]. Refer to the Waste/Source Sampling section of this report for further discussion of source sample analytical results.

On 30 April 1982, CT DEP issued Pollution Abatement Order No. 3244 to Suburban. The Order required Suburban to cease discharging solvent-bearing wastewater to the ground and to investigate potential soil and groundwater contamination on Lot No. 171 [11, p. 3].

In May 1982, Suburban retained Baron Consulting Company (Baron) of Orange, CT to conduct soil and groundwater sampling on Lot No. 171. Between 15 and 21 May 1982, Baron excavated four test pits on Lot No. 171 [11, p. 3]. The location of the test pits was not included in available file information.

On 21 May 1982, Suburban sealed the floor drains in the garage area in the building on Lot No. 171 under the supervision of CT DEP personnel, thereby preventing the floor drain from discharging to the dry well [11, p. 3].

On 25 May 1982, Baron excavated four "new" test pits (Test Pit Nos. 1 through 4) in the same location as the original test pits on the property. Baron personnel were unable to collect soil and groundwater samples from the four original test pits excavated on Lot No. 171 between 15 and 21 May because the test pits had "silted up". Analytical results of source/soil samples collected from the "new" test pits indicated no hazardous substances above reference criteria. No information is available regarding analytical methods. Refer to the Waste/Source Sampling section of this report for further discussion of source sample analytical results. "Groundwater samples" were collected from standing water in each test pit. Analysis of groundwater samples indicated the presence of TCE in Sample Number 4 (collected from Test Pit No. 4) at 32 ppb [11, pp. 3 and 8].

On 3 June 1982, CT DEP Department of Water Compliance personnel collected two additional "groundwater samples" from Test Pit Nos. 2 and 3 and delivered them to the CT Department of Health's Analytical Laboratories for VOC analysis. The results of the groundwater sample were not included in available file information. A soil sample was also collected by CT DEP on the Suburban property on 3 June 1982; however, the location of the soil sample was not included in available file information. A letter to Suburban from CT DEP stated that the analysis of the soil sample by the CT Department of Health "showed no TCE " [11, pp. 3 and 8].

On 4 June 1982, Baron collected four additional "groundwater samples" from Test Pit Nos. 1 through 4 for VOC analysis. The samples were analyzed by Baron's Analytical Services Division (Baron Analytical). TCE (14 ppb) and chloroform (21 ppb) were detected in the sample collected from Test Pit No. 3. The laboratory results indicated that the groundwater samples collected from Test Pit Nos. 1, 2, and 4 did not contain TCE at concentrations above the laboratory instrument detection limit of 2 ppb. However, chloroform was detected in Test Pit Nos. 1, 2, and 4 at 8 ppb, 11 ppb, and 12 ppb, respectively [11].

On 17 June 1982, Baron collected samples of the Klenzer steam cleaner solvent and the Savosol parts solvent used in the vehicle washing area. Analytical results of the samples indicated the presence of three VOCs in the Savosol samples and no VOCs in the Klenzer samples above laboratory detection limits [11, p. 7]. Refer to the Waste/Source Sampling section of this report for further discussion of source sample analytical results.

On 23 August 1982, at the request of CT DEP, Baron collected another "groundwater sample" from Test Pit No. 3 and analyzed it for VOCs at their analytical laboratory. TCE was again detected at this location at a concentration of 23 ppb [11, p. 9].

In a letter from CT DEP to Suburban dated 30 September 1982, Suburban was reported to be in compliance with Directive 1 of Pollution Abatement Order No. 3244, which was issued by CT DEP on 30 April 1982. The Order required that Suburban conduct an investigative study of contamination on the property. The letter stated that no remedial action would be necessary since "no significant source of pollution was found" [9, Appendix 6].

In 1986, Pollution Abatement Order No. 3244 was "completely fulfilled" when Suburban connected its vehicle washing area discharge flows to the Town of Cheshire sanitary sewer. This occurred following installation of a buried oil/water separator below the floor drain to remove floatable oil and grease from the wastewater. According to the Cheshire Sewer Commission, Suburban was not required to obtain an industrial discharge permit [12, p. 6]. No information is available to START regarding the disposal of wastewater between 1982 and 1986.

On 2 December 1986, the NUS Corporation/Field Investigation Team (NUS/FIT) conducted a perimeter survey of the Suburban property as part of a Preliminary Assessment (PA). During the perimeter survey, NUS/FIT personnel observed a sandy area north of the buildings that "exhibited signs of construction work." There were several trucks, pieces of plastic pipe on the ground, and two aboveground storage tanks (ASTs). The property was not secured by a fence. NUS/FIT recommended to EPA Region I that a Site Inspection (low priority) be conducted to ensure that Baron's investigation, the only soil and groundwater study conducted to date, was "in accordance with CERCLA" and to ensure that Baron's methods and data were reviewed [10, pp. 1-2]. The exact location of the ASTs was not included in available file information.

On 9 May 1988, a letter from the SCCRWA indicated that the area to the rear (north of) the building on Lot No. 171 was unpaved and vulnerable to contamination in case of a spill. The letter further indicated that heavy machinery, an open waste oil AST, several 55-gallon drums of oil, and several other "metal tanks appearing to contain oil" were stored on Lot No. 171. According to the letter, there was also a 1,000-gallon waste oil underground storage tank (UST), a 3,000-gallon diesel fuel UST, and a 1,000-gallon fuel oil UST being "stored on site." The letter further claimed that a 1,000-gallon gasoline tank had been abandoned on Lot No. 171 [9, p. 6]. The location of the USTs was

not included in available file information. There is no further information available regarding the abandoned tank.

In July 1988, four USTs were reportedly removed from Lot No. 171. According to officials at the Chesprocott Health District, records indicated that during excavation of the four USTs, a 1,000-gallon fuel oil UST was installed [30]. There is no further information available indicating whether the USTs removed were the same USTs described in the 9 May 1988 SCCRWA letter.

On 16 April 1990, NUS/FIT performed an on-site reconnaissance of the Suburban property as part of a Screening Site Inspection (SSI). During the reconnaissance, NUS/FIT observed two buildings on the Suburban property: one building, on Lot No. 171, contained company offices and a garage; and the other building, on Lot No. 170, contained a warehouse that was also used as an instructional classroom training area. Other structures observed on Lot No. 171 included a storage building (size and exact location unknown) and a wooden AST berm/shelter (size unknown) located on the northeastern part of the property. The AST shelter appeared to be new; it was not observed during the 1986 NUS/FIT perimeter survey (at which time the two ASTs were observed to be unsheltered). The floor of the shelter, positioned above the ASTs, contained a trap door. Reportedly, the trap door provided access to three 1,000-gallon ASTs and their distribution lines. The three ASTs contained gasoline, diesel fuel, and waste oil. The diesel fuel and gasoline ASTs were connected to a pair of fuel pumps located 50 ft northeast of the main building on the property. Used motor oils and grease were pumped to the waste oil AST from the pretreatment interceptor beneath the vehicle washing area. The vehicle washing area was observed as "an area of concrete flooring fenced on three sides" [11, pp. 1-2].

No groundwater monitoring wells or test pits were observed on the property during the NUS/FIT reconnaissance. Puddles of standing water were present on the unpaved area near the northern property boundary, upgradient of where the property sloped north toward the wetland area. One open 55-gallon drum, covered with a board and labeled "waste PCBs," was observed at the southeast corner of the property; the letters "CN" were spray-painted on the drum. According to the NUS/FIT report, the drum was used as a work table. No readings above background were detected on a portable photoionization detector (PID) in the area around the drum. Reportedly, this drum was previously decontaminated and delivered to the property the week before by a company called "Textron" (location unspecified), where Suburban had performed work. According to the NUS/FIT report, the "owner" of the property maintained that all the drums on the property could be "certified as clean." No further information is available regarding the identity of the owner [11, pp. 1-2].

At the rear of the office/garage building, NUS/FIT personnel observed a 275-gallon fuel oil AST with skids. The AST was located "next to a dumpster that contained a variety of oil filters and spray paint cans." The exact location of the dumpster is unavailable to START. Construction material, including polyvinyl chloride (PVC) pipe and crates of PVC joints, was observed on the ground in the area east of the fuel pumps and near the storage building and AST shelter. More PVC pipe, scrap metal, and plastic barrel construction road markers were observed along three sides of the storage building. At the northeast corner of the storage building, NUS/FIT personnel observed six closed 55-gallon drums on unpaved ground; two of the drums were plastic, and four of the drums were steel. Three of the steel drums were sealed, and the fourth was open. One steel drum had a bulging lid. The steel drums showed signs of rust. Both plastic drums appeared to be intact. One of the two plastic drums was marked "corrosive" and was the only clearly marked drum of the six. Reportedly, this drum was used to store contaminated personal protective equipment from job sites involving the excavation of contaminated soil. The contents of the other drums were unknown. The location of

the drums observed by NUS/FIT was not located in available file information. There was some evidence of stained soil in an area at the northeast corner of the storage shed. Between a freight trailer and a steamroller at the northwest corner of the property, NUS/FIT personnel observed an approximately 3-ft-long by 3-ft-wide area of stressed vegetation. Grayish, sludge-like material was observed on top of the grass at this location, as well as an oily sheen in a puddle approximately 3 ft east of this area [11, pp. 1-2]. The location of the stressed vegetation was not included in available file information.

On 7 May 1996, SCCRWA conducted routine groundwater sampling at South Cheshire, South Sleeping Giant, and North Sleeping Giant Well Fields. Analytical results indicated that TCE concentrations were less than 0.5 ppb, and chloroform concentrations were approximately 8 ppb in the groundwater samples [12, p. 14].

On 30 May 1996, START personnel conducted an on-site reconnaissance of the Suburban property as part of the SIP. START personnel observed the property to be relatively flat, with a slight grade that sloped north. The majority of the property was observed as paved with asphalt, with a building on the southwest corner of the property that contained office space and a garage. A grass-covered area was observed at the northern end of the property, and the northern border of the property was observed to be heavily wooded. START personnel observed four drums inside the building on Lot No. 171 and four drums north of the building. The drums appeared to be "clean and empty." A fuel oil AST was observed in the northeast corner of the building on Lot No. 171 (Figure 2). No information is available from the 30 May 1996 START on-site reconnaissance regarding Lot No. 170 or the storage shed and the wooden AST berm/shelter located on the northeast corner of the property, which were observed during the NUS/FIT 1990 reconnaissance. No sampling was conducted as part of the SIP [12, pp. 1, 4, and 6].

On 3 February 1999, InterEquity, receiver for First Wall Street SBIC, obtained ownership of Lot Nos. 170 and 171 [9, p. 2].

On 3 March 2000, Aaron Environmental, Inc. (Aaron) of Plantsville, CT, completed a Phase I Environmental Site Assessment (Phase I) for Lot No. 170 for InterEquity. The report summary stated that the building on Lot No. 170 was built in 1985, that Suburban purchased the property in 1988, and that the building was used for training purposes and to store landscaping materials. The report summary concluded that the CERCLIS listing of the property was due to the discharge of wastewater from vehicle washing activities to a dry well that occurred until 1982 on Lot No. 171 [15, p. 11].

On 23 March 2000, Aaron completed a Phase I for Lot No. 171. The report summarized the following areas of potential concern: former USTs removed from Lot No. 171 in July 1988; a former 550-gallon UST (location of UST and removal information unavailable); a septic system and dry well where wastewater containing solvents was discharged; a floor drain conveyance system, including buried pipes and grease traps; a current heating oil UST; a current PVC-40 pipe located at the northeastern corner of the building wall, possibly leading to a waste oil AST and current ASTs on Lot No. 172, an adjacent property to the east; and possible buried pipes leading from ASTs on Lot No. 172 to Lot No. 171. The report listed potential actions for Lot Nos. 171 and 172, which included a magnetometer survey to evaluate the presence of buried tanks and piping; dye tests to evaluate flows from the floor drain conveyance system, buried pipes, and grease traps; and soil and groundwater sampling to evaluate residual contamination. The report also included information

concerning the storage building and the wooden AST berm/shelter, observed during the 16 April 1990 NUS/FIT on-site reconnaissance. During the NUS/FIT on-site reconnaissance, these structures were observed as located on Lot No. 171. According to Aaron's Phase I for Lot No. 171 and tax assessor's maps, the shelter is located on Lot No. 172. According to Aaron's Phase I for Lot No. 171, the AST berm/shelter contains a 2,000-gallon gasoline AST, a 2,000-gallon diesel AST, and a 1,000-gallon waste oil AST (Figure 2) [9, Table 1].

On 20 January 2000, Aaron initiated a soil and groundwater investigation (Phase II) of Lot No. 171. Aaron advanced 15 soil borings (B1 through B15), collected 15 subsurface soil samples (B1 through B15), and collected groundwater samples from temporary well points installed at soil boring locations B1, B4, B7, and B10 through B14. The subsurface soil samples were analyzed for VOCs, extractable total petroleum hydrocarbons (ETPHs), and RCRA 8 metals. The groundwater samples were analyzed for VOCs and ETPHs [8, Tables 1 and 2].

Analytical results of Aaron subsurface soil samples B1 through B15 indicated the presence of ETPHs, 12 VOCs, two semivolatile organic compounds (SVOCs) (included as VOCs in Aaron's report), and one metal (lead) at concentrations that exceeded established CT DEP Residential Direct Exposure Criteria (RESDEC) or Pollutant Mobility Criteria (PMC) [8, Table 1]. Refer to the Waste/Source Sampling section of this report for further discussion of source sample analytical results.

Analytical results of Aaron groundwater samples B1, B4, B7, and B10 through B14 indicated the presence of ETPHs and 17 VOCs [8, Table 2]. Refer to the Groundwater Pathway section of this report for further discussion of groundwater sample analytical results.

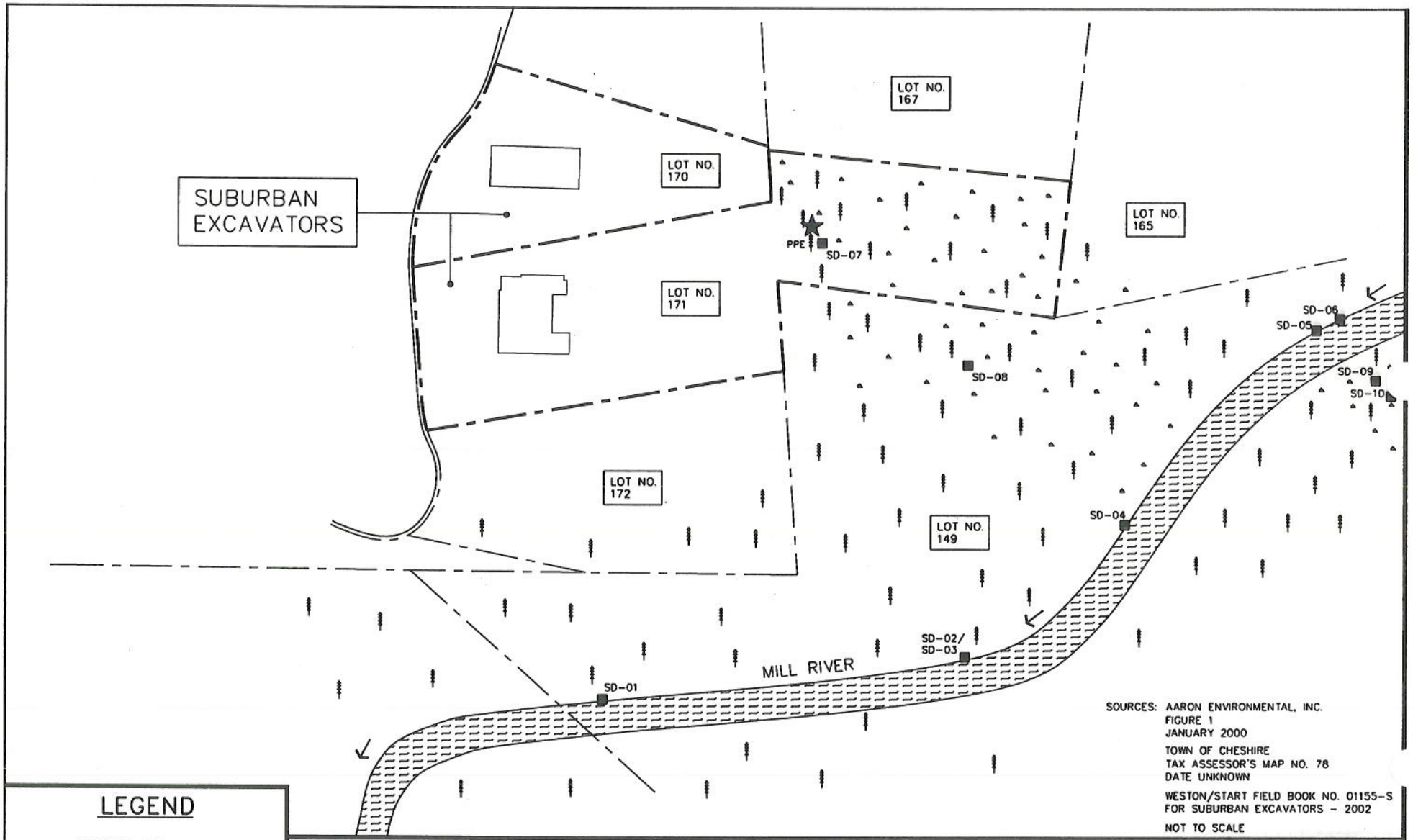
Due to the presence of lead in soil samples collected from soil boring B2, located near the vehicle washing area, four additional soil borings (B101 through B104) were installed in the vicinity of B2 to evaluate the extent of lead contamination. Soil samples were collected from B101 through B104 and were analyzed for total lead. Lead was detected at a maximum concentration of 38 parts per million (ppm) in one of the four samples (sample identification unknown) [8, p. 3].

In May 2000, Aaron installed 10 micro-wells, MW-1 through MW-10, on Lot No. 171 to allow further groundwater sampling and to evaluate the horizontal component of groundwater flow (Figure 2). Ten groundwater samples (MW-1 through MW-10) were collected on 17 May, 7 June, and 17 July 2000, and were submitted for ETPH and VOC analyses. No reference sample was collected. Analytical results of Aaron groundwater samples MW-1 through MW-10 indicated the presence of ETPH and 16 VOCs [8, p. 3 and Table 3]. Refer to the Groundwater Pathway section of this report for further discussion of groundwater sample analytical results.

On 20 October 2000, Lot No. 170 was sold to Orazzan LLC. Since its purchase, Orrazzan LLC has leased Lot No. 170 to various retail companies [5].

On 23 May 2002, START personnel conducted an off-site perimeter reconnaissance of the Suburban property as part of the SR. Refer to the Site Description section of this report for further discussion of the off-site reconnaissance [14, pp. 5-16].

On 20 January 2003, START personnel collected 10 sediment samples (SD-01 through SD-10) from nine locations within the on-site wetlands and along the Mill River, located north and east of the Suburban property, as part of the SR (Figure 2A) [14, pp. 18-22].


SUBURBAN EXCAVATORS
LOT NO. 167
LOT NO. 170
LOT NO. 165
LOT NO. 171
LOT NO. 172
LOT NO. 149
PPE
SD-07
SD-08
SD-06
SD-05
SD-09
SD-10
SD-04
SD-02/ SD-03
SD-01
MILL RIVER
SOURCES: AARON ENVIRONMENTAL, INC. FIGURE 1 JANUARY 2000
TOWN OF CHESHIRE TAX ASSESSOR'S MAP NO. 78 DATE UNKNOWN
WESTON/START FIELD BOOK NO. 01155-S FOR SUBURBAN EXCAVATORS - 2002
NOT TO SCALE
LEGEND
PROPERTY LINE
WOODED AREA/ TREE
WETLANDS
PPE PROBABLE POINT OF ENTRY TO SURFACE WATER PATHWAY
SD-0 SEDIMENT SAMPLE LOCATION
FLOW DIRECTION
SURFACE WATER
START SEDIMENT SAMPLING LOCATION SKETCH
SUBURBAN EXCAVATORS
1074 AND 1076
SOUTH MAIN STREET
CHESHIRE, CONNECTICUT
WESTON SOLUTIONS
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
TDD # 03-05-0133
DRAWN BY: S. ROSE
DATE 12/9/02
FILE NAME: S:\03050133\FIGURES\FIG2A.DWG
FIGURE 2A
N

All the sediment samples were analyzed through a Delivery of Analytical Services (DAS) laboratory for VOCs, SVOCs, pesticides, polychlorinated biphenyls (PCBs), target analyte list (TAL) metals, and cyanide, with the exception of SD-06 and SD-10, which were analyzed for TAL metals only [14, pp. 18-22; 44; 45]. Analytical results of the sediment samples indicated the presence of three VOCs, 14 SVOCs, three pesticides, nine metals, and cyanide at concentrations above START reference criteria [44; 45]. Refer to the Surface Water Pathway section of this report for further discussion of sediment sample analytical results.

Table 1 presents identified structures or areas on the Suburban property that are documented or potential sources of contamination, the containment factors associated with each source, and the relative location of each source.

Table 1

Source Evaluation for Suburban Excavators

Source Area	Containment Factors	Spatial Location
Gasoline and Diesel Fuel ASTs on Lot No. 172	No secondary containment features observed.	Located in a wooden berm shelter.
Waste Oil AST on Lot No. 172	No secondary containment features observed.	Located in a wooden berm shelter.
Dry Well on Lot No. 171	Unknown.	Located below the vehicle washing area.
Contaminated Subsurface Soil on Lot No. 171	No secondary containment features observed.	Located throughout the property.
Buried Distribution Lines on Lot Nos. 171 and 172	Unknown.	Located between the former fuel dispensing island on Lot No. 171 and the wooden berm shelter on Lot No. 172.
Floor Drain Conveyance System on Lot No. 171	Unknown.	Located below the vehicle washing area and the garage and office building and between the garage and office building and the vehicle washing area.
Fuel Oil UST on Lot No. 171	Unknown.	Located north of the garage and office building.
Former Fuel Dispensing Island on Lot No. 171	Unknown.	Located south of the garage and office building.
Former Gasoline and Diesel Fuel USTs on Lot No. 171	Unknown.	Unknown location on Lot No. 171.
Former Waste Oil USTs on Lot No. 171	Unknown.	Unknown location on lot No. 171.
Former Fuel Oil ASTs in Garage Area on Lot No. 171	Unknown.	Unknown location on Lot No. 171.

ASTs = Aboveground Storage Tanks.
USTs = Underground Storage Tanks.
No. = Number.

[8-12]

Table 2 summarizes the types of potentially hazardous substances which have been disposed, used, or stored on the Suburban property.

Table 2

Hazardous Waste Quantity for Suburban Excavators

Substance	Quantity or Volume/Area	Years of Use/Storage	Years of Disposal	Source Area
Gasoline and Diesel Fuel.	Two 2,000-gallon ASTs.	Unknown	Unknown	Gasoline and Diesel Fuel ASTs on Lot No. 172
Waste Oil.	One 1,000-gallon AST	Unknown	Unknown	Waste Oil AST on Lot No. 172
VOCs.	An estimated 55.66 ft^3.	1955 to 1982	1955 to 1982	Dry Well on Lot No. 171
VOCs, SVOCs, and metals.	An estimated 1.57 acres (18,300 ft^2).	NA	NA	Contaminated Subsurface Soil on Lot No. 171
VOCs and SVOCs.	Unknown.	Unknown	NA	Buried Distribution Lines on Lot Nos. 171 and 172
VOCs and SVOCs.	Unknown.	Unknown	NA	Floor Drain Conveyance System on Lot No. 171
Fuel Oil.	One 1,000-gallon UST.	1988 to Present	NA	Fuel Oil UST on Lot No. 171
Gasoline and Diesel Fuel.	Unknown.	Unknown	NA	Former Fuel Dispensing Island on Lot No. 171
Gasoline and Diesel Fuel.	One 5,000-gallon UST; two 3,000-gallon USTs.		NA	Former Gasoline and Diesel Fuel USTs on Lot No. 171
Waste Oil.	One 1,000-gallon UST.	Unknown	NA	Former Waste Oil USTs on Lot No. 171
Fuel Oil.	One 1,000-gallon AST; two 110-gallon ASTs.	Unknown	NA	Former Fuel Oil ASTs in Garage Area on Lot No. 171

VOCs = Volatile Organic Compounds.
SVOCs = Semivolatile Organic Compounds.
ASTs = Aboveground Storage Tanks.
USTs = Underground Storage Tanks.
ft^2 = Square Feet.
ft^3 = Cubic Feet.
No. = Number.
NA = Not Applicable.

[8-12]

Three Resource Conservation and Recovery Information System (RCRIS) facilities are located within 1 radial mile of the Suburban property. There are no CERCLIS properties and no National Priority List (NPL) properties located within 1 radial mile of the Suburban property [40-42].

According to Aaron, a scheduled removal action for contaminated subsurface soils on Lot No. 171 is planned [19].

Suburban's current status with CT DEP is "General Accounting Office (GAO) Site-Not Active State Lead." A "GAO Site-Not Active State Lead" designation indicates that the Suburban property, a "potential Superfund site" listed in the 1998 November GAO report entitled "Hazardous Waste: Information on Potential Superfund Sites," has not been addressed under remediation programs administered by CT DEP. In March 2002, CT DEP sent EPA Region I a list of GAO Site-Not Active State Lead" sites for further evaluation of the sites under CERCLA [39].

WASTE/SOURCE SAMPLING

On 19 February 1982, CT DEP collected samples of a steam cleaning solvent (Klenzer) and a parts cleaner (Savosol) used in the vehicle washing area on Lot No. 171. CT DEP also collected samples of the discharged wastewater that was generated in the garage and in the vehicle washing area [12, p. 4; 22]. Both the cleaner and the wastewater samples were submitted for VOC analysis. Sample analysis of the Klenzer indicated the presence of carbon tetrachloride (590 ppb), methyl ethyl ketone (MEK) (160 ppb), octane (330 ppb), and toluene (75 ppb). Sample analysis of the Savosol indicated the presence of 1,1,1-trichloroethane (1,1,1-TCA) (360 ppb); TCE (1,100 ppb); 1,1,2,2-tetrachloroethylene (START assumes this substance to be 1,1,2,2-tetrachloroethane) (160 ppb); and ethylene bromide (82 ppb). Sample analysis of the wastewater indicated the presence of butanol (300 ppb), propanol (5,800 ppb), toluene (45 ppb), and TCE (63 ppb) [11, p. 7].

In May 1982, Suburban retained Baron to conduct soil and groundwater sampling on Lot No. 171. Between 15 and 21 May 1982, Baron excavated four test pits on Lot No. 171. On 25 May 1982, Baron excavated four "new" test pits (Test Pit Nos. 1 through 4) on the property because Baron personnel were unable to collect soil and groundwater samples from the first four test pits excavated on Lot No. 171, since the test pits had "silted up,". The new test pits were excavated at the same locations as the original test pits to a depth of 14 ft, filled with 2 to 3 cubic yards of 1-inch crushed stone around a 4-inch perforated PVC pipe, and were then backfilled by Suburban. Baron collected two soil samples each from Test Pit No. 1 (between 4 and 18 inches), Test Pit No. 2 (between 4 and 31 inches), and Test Pit No. 3 (between 4 and 18 inches). Baron collected one soil sample from Test Pit No. 4 (15 inches). The soil samples were analyzed for VOCs by Baron Analytical. None of the soil samples collected contained VOCs above the laboratory detection limits of 15 ppb [11, pp. 3 and 8].

On 17 June 1982, Baron collected samples of the Klenzer steam cleaner solvent and the Savosol parts solvent used in the vehicle washing area. The samples were analyzed for VOCs by Baron Analytical. Sample analysis of the Savosol indicated the presence of 1,1,1-TCA (27 ppb); TCE (13 ppb); and tetrachloroethylene (85 ppb). Sample analysis of the Klenzer indicated that no VOCs were present above the laboratory instrument detection limit of 10 ppb [11, p. 7].

On 20 January 2000, Aaron initiated the Phase II of Lot No. 171. Aaron advanced 15 soil borings (B1 through B15) and collected 15 subsurface soil samples (B1 through B15). No subsurface soil reference sample was collected. Soil boring samples were collected by direct-push methods, and the soil samples were collected continuously from grade to the observed groundwater table. One sample per boring was submitted for laboratory analysis of ETPHs, VOCs, SVOCs, PCBs, and RCRA 8 metals. When no physical evidence of contamination was observed, the soil sample collected at the observed groundwater interface was submitted for analysis. The depth to the groundwater table ranged between 3 and 10 ft below ground surface (bgs); soil sample depths averaged between 4 and 6 ft bgs [8, p. 2].

Maximum concentrations of substances detected in Aaron subsurface soil samples B1 through B15 that exceeded established CT DEP RESDEC or PMC are as follows: ETPHs (21,000,000 ppb in B4); methylene chloride (830 ppb in B4); benzene (2,700 ppb in B4); toluene (38,000 ppb in B4); tetrachloroethylene (780 ppb in B4); total xylene (47,000 ppb in B4); isopropylbenzene (11,000 ppb in B4); n-propylbenzene (3,600 ppb in B4); 1,3,5-trimethylbenzene (7,400 ppb in B4); 1,2,4-trimethylbenzene (33,000 ppb in B4); sec-butylbenzene (1,600 ppb in B4); p-isopropyltoluene (3,600 ppb in B4); n-butylbenzene (5,600 ppb in B4); naphthalene (7,300 ppb in B5); bis(2-ethylhexyl)phthalate (2,400 ppb in B4); and lead (1,900 ppm in B2) [8, Table 1].

Maximum concentrations of organic compounds detected in Aaron subsurface soil samples B1 through B15 at concentrations below established RESDECs or PMCs are as follows: methyl tert-butyl ether (MTBE) (290 ppb in B4); 2-butanone (MEK) (1,500 ppb in B4); cis-1,2-dichloroethene (cis-1,2-DCE) (1,500 ppb in B4); 1,1,1-TCA (420 ppb in B4); ethylbenzene (8,100 ppb in B4); and butylbenzylphthalate (9,000 ppb in B4) [8, Table 1].

Due to the presence of lead in the soil sample collected from soil boring B2 (located near the vehicle washing area), four additional soil borings (B101 through B104) were installed in the vicinity of B2 to evaluate the extent of lead contamination. Soil samples were collected from B101 through B104 and were analyzed for total lead. Lead was detected at a maximum concentration of 38 ppm in one of the four samples (sample identification unknown) [8, p. 3].

GROUNDWATER PATHWAY

Bedrock underlying the Suburban property consists of New Haven Arkose. New Haven Arkose is a coarse-grained variety of sedimentary rock comprised of interbedded grayish-orange-pink to very pale orange conglomerate arkose and grayish-red to dark reddish-brown siltstone [11]. Overburden, in the form of stratified drift, increases in a northwest direction across the Suburban property. The stratified drift is composed of sand, gravel, silt, and clay. Depth to bedrock on the Suburban property ranges from approximately 150 to 200 ft bgs. Depth to unconsolidated materials ranges from approximately 25 to 100 ft bgs. Surface soils, according to records from the test pit excavations, consist of sand and gravel to approximately 4 ft bgs, and peat from approximately 4 to 8 ft bgs [8; 11; 28].

The average annual precipitation for a CT Agricultural Experiment Station located in Hamden, CT, approximately 10 miles south of the Suburban property, is approximately 47.25 inches [38]. Based on groundwater elevation data from Aaron, and bedrock foliation in the vicinity of the property, groundwater likely flows south/southeast toward Mill River. According to boring logs generated from monitoring wells installed on the property by Aaron, depth to groundwater ranges from approximately 3 to 10 ft bgs [8; 11].

Groundwater beneath the Suburban property is classified predominantly as GAA by CT DEP. The GAA classification designates a preliminary aquifer protection area (Wellhead Protection Area) [31].

Portions of the following CT towns or cities are wholly or partially located within 4 radial miles of the Suburban property: Bethany (population: 5,040), Cheshire (population: 28,543), Hamden (population: 56,913), Meriden (population: 58,244), North Haven (population: 23,035), Prospect (population: 8,707), and Wallingford (population: 43,026) [1-4; 63].

The SCCRWA system consists of five unique water service districts that serve an estimated 393,853 people in all or part of the following towns: Wolcott, Cheshire, Prospect, Bethany, Hamden, Orange, Meriden, Milford, West Haven, New Haven, North Haven, East Haven, Woodbridge, Branford, and North Branford [55-57]. These districts are supplied by three surface water supply systems (which are composed of a total of 14 surficial water sources) and five well fields (which are composed of a total of 12 individual wells). The surface water supply system accounts for an estimated 77% of the total capacity of the SCCRWA system, and the well fields account for an estimated 23% of the total capacity. None of the surficial sources are located along the 15-mile downstream surface water pathway for the Suburban property. No single water source (groundwater or surface water) ever supplies more than 40% of the total supply for the system [55; 56]. Although each service district contains its own water sources that are blended within the district, the service districts are all interconnected, and, as a result, the SCCRWA can route water from one district to another [56]. Therefore, it is possible that customers could potentially receive water from any one of the SCCRWA's 26 sources (12 individual wells and 14 surficial sources). As a result, START considered the entire SCCRWA system to be blended when calculating the population apportionment for each well in the SCCRWA well field system. According to this apportionment, each well in the SCCRWA system serves an estimated 15,148 people [57].

Most of the residents of the Town of Bethany receive drinking water from private groundwater drinking water supply wells, and no known public groundwater drinking water supply wells are located in the Town of Bethany; however, an estimated 12 residents are served by public drinking water from the SCCRWA [57].

Residents of the Town of Cheshire receive public drinking water from the SCCRWA. In the Town of Cheshire, SCCRWA operates two well fields, the North Cheshire Well Field and the South Cheshire Well Field. The North Cheshire Well Field is located greater than 4 radial miles from the Suburban property. The South Cheshire Well Field, composed of two overburden drinking water supply wells, is located 0.3 miles south of the Suburban property. According to the SCCRWA apportionment calculations, each well in the South Cheshire Well Field serves an estimated 15,148 people, resulting in a total of 30,296 people [55; 57].

Approximately 51,300 residents of the City of Hamden receive drinking water from the SCCRWA [59]. Three active well fields are located in Hamden. The North Sleeping Giant Well Field, which is composed of three overburden wells, is located approximately 2.2 miles south of the Suburban property. According to the SCCRWA apportionment calculations, each well in the North Sleeping Giant Well Field serves an estimated 15,148 people, resulting in a total of 45,444 people. The South Sleeping Giant Well Field, which is composed of one overburden well, is located approximately 2.9 miles south of the Suburban property. According to the SCCRWA apportionment calculations, this well serves an estimated 15,148 people. The Mount Carmel Well Field is located greater than 4 radial miles from the Suburban property [55].

The residents of the City of Meriden, as well as portions of Berlin, Southington, and Wallingford, are served with drinking water by the Water Division of the City of Meriden's Department of Public Works (DPW) [47]. The City of Meriden DPW obtains its water supply from SCCRWA, four surface water sources, and six active groundwater sources, all of which are blended together. None of the surficial sources are located on the downstream surface water pathway; and all six groundwater sources are located greater than 4 radial miles from the Suburban property [1; 2; 3; 4; 49].

An estimated 20,600 residents of the Town of North Haven receive drinking water from the SCCRWA. There are no SCCRWA drinking water supply wells located in the Town of North Haven [55; 57; 59].

Approximately 98% of the residents in the Town of Prospect receive drinking water from private groundwater drinking water supply wells. Public drinking water provided by the Connecticut Water Company is available to residents along Union City Road (Route 68), and Waterbury and Center Streets (Route 69) in Prospect; however, currently, not all the residents along these streets have been connected to the public water supply lines. The Connecticut Water Company utilizes drinking water supply sources that are located greater than 4 radial miles from the Suburban property [46].

Residents of the Town of Wallingford are served by the Town of Wallingford Department of Public Utilities, which serves an estimated 36,321 people and utilizes four reservoirs and three groundwater drinking water supply wells. The four reservoirs supply approximately 90% of the town water supply and are not located along the 15-mile downstream surface water pathway for the Suburban property. The three groundwater drinking water supply wells supply approximately 10% of the town's water supply. One of the three groundwater drinking water supply wells, Well No. 1, is located approximately 3.9 miles east of the Suburban property and serves an estimated 1,211 people [61; 62].

Table 3 summarizes the public groundwater supply sources located within 4 radial miles of the Suburban property.

Table 3

Public Groundwater Supply Sources Within 4 Radial Miles of Suburban Excavators

Distance/Direction from Suburban Excavators	Source Name	Location of Source[a]	Estimated Population Served	Source Type[b]
0.3 miles south	South Cheshire Well Field No. 1	Cheshire	15,148	Overburden
0.3 miles south	South Cheshire Well Field No. 2	Cheshire	15,148	Overburden
2.2 miles south	North Sleeping Giant Well No. 1	Hamden	15,148	Overburden
2.2 miles south	North Sleeping Giant Well No. 2	Hamden	15,148	Overburden
2.2 miles south	North Sleeping Giant Well No. 3	Hamden	15,148	Overburden
2.9 miles south	South Sleeping Giant Well	Hamden	15,148	Overburden
3.9 miles east	Well No. 1	Wallingford	1,211	Overburden

[a] Indicates Town in which well is located.
[b] Overburden, Bedrock, or Unknown.
No. = Number.

[55; 57; 59; 61; 62]

Private groundwater supplies located within 4 radial miles of the property were estimated using equal distribution calculations of U.S. Census CENTRACTS data identifying population, households, and private water wells for "Block Groups" which lie within or partially within individual radial distance rings measured from the Suburban property. START was unable to determine the exact location of the nearest private drinking water supply well; however, according to CENTRACTS data, it is located within 0.25 radial miles of the property [21]. The total population which relies on groundwater drinking water supply sources within 4 radial miles of the property is estimated to be 101,755 persons [21; 55; 57; 59; 61; 62]. Table 4 summarizes the estimated drinking water populations served by groundwater sources within 4 radial miles of the Suburban property.

Table 4

Estimated Drinking Water Populations Served by Groundwater Sources Within 4 Radial Miles of Suburban Excavators

Radial Distance from Suburban Excavators (miles)	Estimated Population Served by Private Wells	Estimated Population Served by Public Wells	Total Estimated Population Served by Groundwater Sources Within the Ring
≥ 0.00 to 0.25	56	0	56
> 0.25 to 0.50	135	30,296	30,431
> 0.50 to 1.00	510	0	510
> 1.00 to 2.00	1,892	0	1,892
> 2.00 to 3.00	2,793	60,592	63,385
> 3.00 to 4.00	4,270	1,211	5,481
TOTAL	9,656	92,099	101,755

[21; 55; 57; 59; 61; 62]

Between 1955 and 1982, wastewater generated in the garage and in the vehicle washing area located on Lot No. 171 was discharged to a 55.66-ft^3 dry well located below the vehicle washing area. Reportedly, the wastewater that was discharged to the dry well contained VOCs [12; 22].

In 1981, during routine sampling of Well No. 2 of the South Cheshire Wellfield, TCE was detected in a groundwater sample at 215 ppb [12].

On 30 April 1982, CT DEP issued Pollution Abatement Order No. 3244 to Suburban. The Order required Suburban to cease discharging solvent-bearing wastewater to the ground and to investigate potential soil and groundwater contamination on Lot No. 171. In May 1982, Suburban retained Baron of Orange, CT to conduct soil and groundwater sampling on Lot No. 171 [11, p. 3].

On 25 May 1982, Baron collected "groundwater samples" from standing water in four test pits (Test Pit Nos. 1 through 4) excavated on Lot No. 171 on the property. No information is available

regarding analytical methods. Analysis of the "groundwater samples" indicated the presence of TCE in the sample collected from Test Pit No. 4 at 32 ppb [11, pp. 3, 8].

On 3 June 1982, CT DEP Department of Water Compliance personnel collected two additional "groundwater samples" from Test Pit Nos. 2 and 3, and delivered them to the CT Department of Health's Analytical Laboratories for VOC analysis. The analytical results of the groundwater samples were not included in available file information [11, pp. 3, 8].

On 4 June 1982, Baron collected four additional "groundwater samples" from Test Pit Nos. 1 through 4 for VOC analysis. The samples were analyzed by Baron Analytical. TCE and chloroform were detected in the Test Pit No. 3 sample at concentrations of 14 ppb and 21 ppb, respectively. The laboratory results indicated that the groundwater samples collected from Test Pit Nos. 1, 2, and 4 did not contain TCE at concentrations above the laboratory instrument detection limit of 2 ppb; however, chloroform was detected in Test Pit Nos. 1, 2, and 4 at 8 ppb, 11 ppb, and 12 ppb, respectively [11, pp. 3,8].

On 23 August 1982, at the request of CT DEP, Baron collected another "groundwater sample" from Test Pit No. 3 and analyzed it for VOCs at Baron Analytical. TCE was again detected at this location at a concentration of 23 ppb [11, p. 9].

On 7 May 1996, routine groundwater sampling was conducted at the South Cheshire, South Sleeping Giant, and the North Sleeping Giant Well Fields. No information is available regarding analytical methods. Analytical results indicated that TCE concentrations were less than 0.5 ppb, and chloroform concentrations were approximately 8 ppb in the groundwater samples [12, p. 14].

On 20 January 2000, as part of the Aaron Phase II, eight groundwater samples (B1, B4, B7, and B10 through B14) were collected from soil borings using a GeoProbe Mill-slot sampler advanced to 5 ft. No reference sample was collected. Groundwater samples were collected with dedicated, disposable mini-bailers. The samples were analyzed for ETPHs and VOCs by EPA Method 8260 [8, p, 2].

The following substances in Aaron groundwater samples B1, B4, B7, and B10 through B14 were detected (maximum concentrations listed in parentheses) at concentrations exceeding CT DEP Groundwater Protection Criteria (GWPC): ETPHs (130 ppb in B4; GWPC is 100 ppb); methylene chloride (36 ppb in B4; GWPC is 5 ppb); cis-1,2-DCE (180 ppb in B4; GWPC is 70 ppb); benzene (220 ppb in B4; GWPC is 1 ppb); toluene (1,200 ppb in B4; GWPC is 1,000 ppb); xylene (total) (990 ppb in B4; GWPC is 530 ppb); n-propylbenzene (68 ppb in B4; GWPC is 61 ppb); 1,2,4-trimethylbenzene (530 ppb in B4; GWPC is 350 ppb); p-isopropyltoluene (72 ppb in B4; GWPC is 70 ppb); and n-butylbenzene (85 ppb in B4; GWPC is 61 ppb) [8, Table 2].

The following substances in Aaron groundwater samples B1, B4, B7, and B10 through B14 were detected (maximum concentrations listed in parentheses) at concentrations below CT DEP GWPC: acetone (5.8 ppb in B14; GWPC is 500 ppb); MTBE (3.5 ppb in B14; GWPC is 100 ppb); 2-butanone (MEK) (6 ppb in B7; GWPC is 400 ppb); chlorobenzene (22 ppb in B1; GWPC is 100

ppb); ethylbenzene (180 ppb in B4; GWPC is 700 ppb); isopropylbenzene (25 ppb in B4; GWPC is 30 ppb); 1,3,5-trimethylbenzene (120 ppb in B4; GWPC is 350 ppb); sec-butylbenzene (32 ppb in B1; GWPC is 61 ppb); and naphthalene (190 ppb in B4; GWPC is 280 ppb) [8, Table 2].

In May 2000, Aaron installed overburden 10 micro-wells, MW-1 through MW-10, on Lot No. 171 to allow further groundwater sampling and to evaluate the horizontal component of groundwater flow (Figure 2). The micro-wells were constructed of 1-inch-diameter PVC tubes with 10-ft screens. No reference well was installed. Ten groundwater samples were collected from the micro-wells on 17 May 2000. The groundwater samples were submitted to Con-Test Analytical Laboratories of East Longmeadow, Massachusetts, and were analyzed for ETPHs and VOCs [8, p. 3].

The following substances in Aaron groundwater samples MW-1 through MW-10 were detected (maximum concentrations listed in parentheses) at concentrations exceeding CT DEP GWPC: benzene (156 ppb in MW-9; GWPC is 1 ppb); sec-butylbenzene (62.5 ppb in MW-9; GWPC is 61 ppb); MTBE (332 ppb in MW-9; GWPC is 100 ppb); and ETPHs (14,300 ppb in MW-9; GWPC is 500 ppb) [8, Table 3].

The following substances in Aaron groundwater samples MW-1 through MW-10 were detected (maximum concentrations listed in parentheses) at concentrations below CT DEP GWPC: n-butylbenzene (53 ppb in MW-9; GWPC is 61 ppb); tert-butylbenzene (32.9 ppb in MW-9; GWPC is 61 ppb); 1,1-dichloroethane (30 ppb in MW-9; GWPC is 70 ppb); cis-1,2-DCE (65.6 ppb in MW-9; GWPC is 70 ppb); ethylbenzene (62 ppb in MW-9; GWPC is 700 ppb); p-isopropyltoluene (44.5 ppb in MW-9; GWPC is 70 ppb); naphthalene (124 ppb in MW-9; GWPC is 280 ppb); n-propylbenzene (39.2 ppb in MW-9; GWPC is 61 ppb); toluene (408 ppb in MW-9; GWPC is 1,000 ppb); 1,2,4-trimethylbenzene (116 ppb in MW-9; GWPC is 350 ppb); 1,3,5-trimethylbenzene (58.5 ppb in MW-9; GWPC is 350 ppb); m,p-xylene (189 ppb in MW-9; GWPC is 530 ppb); and o-xylene (94.5 ppb in MW-9; GWPC is 530 ppb) [8, Table 3].

Currently, air strippers on Well No. 2 at the South Cheshire Well Field are off-line. Groundwater passes across the stripper, but the blowers are not turned on. The strippers have been turned off for "quite some time" according to plant officials, due to the lack of VOC contamination. Reportedly, groundwater in Well No. 2 is analyzed regularly for VOCs [16].

START did not perform groundwater sampling as part of the Suburban SR. Based on analytical results of groundwater samples collected from the Suburban property, groundwater beneath the property has been impacted by a release of hazardous substances, which can be considered at least partially attributable to on-site sources [8, Tables 2 and 3]. Analytical results of drinking water samples routinely collected from Well No. 2 at the South Cheshire Well Field, 0.3 miles downgradient of the Suburban property, have indicated no VOC contamination [16]. As a result, no nearby groundwater drinking water supply sources are known or suspected to have been impacted by the potential release from on-site sources.

SURFACE WATER PATHWAY

Topography in the immediate vicinity of the Suburban property slopes slightly from south to north [5; 6]. According to Flood Insurance Rate Maps for the Town of Cheshire, Connecticut, the property is located on the floodway fringe of a 100-year flood boundary [32]. Stormwater runoff from the property flows east/northeast into an on-site wetland located on the northern portion of Lot No. 171. The on-site wetland discharges to Mill River [1]. The probable point of entry (PPE) of hazardous

substances to the downstream surface water pathway is located approximately 200 ft northeast of Lot No. 171, where stormwater enters the on-site wetland [5; 6; 11, p. 4; 12, p. 15].

Surface water flows 0.01 miles through the on-site wetland and discharges into Mill River. Mill River flows 9.59 miles south toward Lake Whitney. Surface water flows south for approximately 2.1 miles through Lake Whitney. From Lake Whitney, Mill River continues to flow south for approximately 2.7 miles until it discharges into New Haven Harbor. The remainder of the surface water pathway consists of a 0.6-mile radial arc extending from the mouth of Mill River into New Haven Harbor in Long Island Sound (Figure 3) [1-4; 33; 23].

The mean annual flow rate for Mill River, measured in Hamden, CT at U.S. Geological Survey (USGS) Gaging Station No. 01196620, located approximately 4.5 miles downstream of the PPE, is 49.0 cubic feet per second (cfs). The mean annual flow rate for the Mill River, measured at the southern end of Lake Whitney in Hamden, CT, at USGS Gaging Station No. 01196626, approximately 11.7 miles downstream of the PPE, is 85.9 cfs [13; 17; 36].

Through extrapolation, the flow rate for the Mill River at the point where the on-site wetland discharges into the river is estimated to be 25.9 cfs. Through interpolation, the flow rate for the Mill River at the northern end of Lake Whitney is estimated to be 75.1 cfs. Through extrapolation, the flow rate of the Mill River where it discharges into New Haven Harbor is estimated to be 99.5 cfs [34; 58].

Surface water bodies located along the 15-mile downstream surface water pathway are summarized in Table 5.

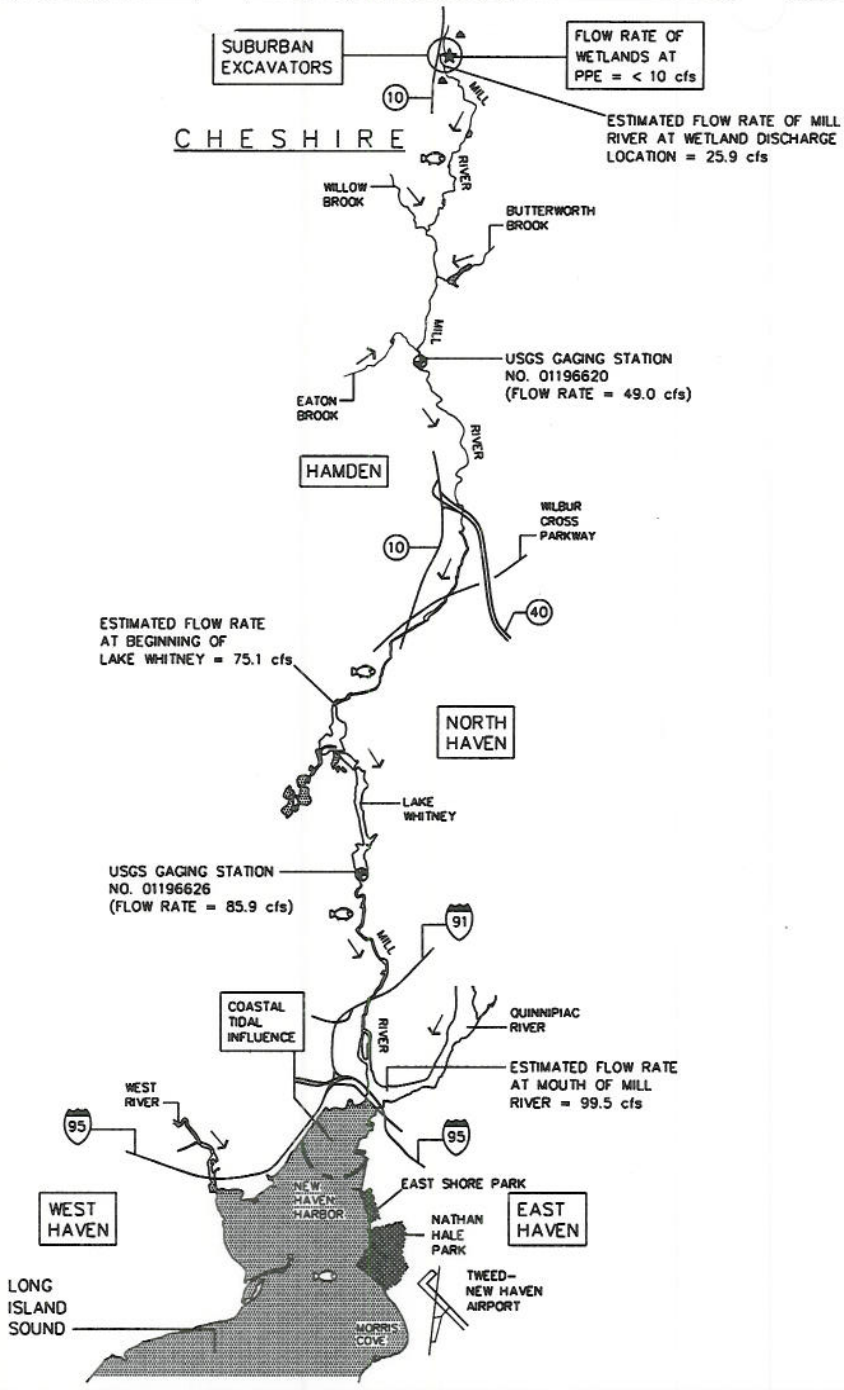
Table 5

Surface Water Bodies Along the 15-Mile Downstream Surface Water Pathway from Suburban Excavators

Surface Water Body	Descriptor[a]	Length of Reach (miles)	Flow Characteristics (cfs)[b]	Length of Wetland Frontage (miles)
Wetland	Minimal Stream	0 to 0.01	<10	0.02
Mill River	Small to Moderate Stream	0.01 to 9.6	25.9 to 75.1	3.50
Lake Whitney	Small to Moderate Stream	9.6 to 11.7	75.1 to 85.9	0.25
Mill River	Small to Moderate Stream	11.7 to 14.4	85.9 to 99.5	2.5
New Haven Harbor	Coastal tidal waters	14.4 to 15	NA	0

[a] = Minimal stream <10 cfs. Small to moderate stream 10-100 cfs. Coastal tidal waters (flow not applicable).
[b] = Cubic feet per second.
NA = Not Applicable.

[1-4; 12; 13; 17; 24-27; 29; 34; 36; 58]



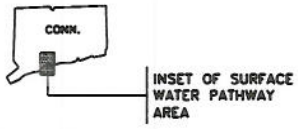
LEGEND

- PROBABLE POINT OF ENTRY TO SURFACE WATER PATHWAY
- FISHERY
- WETLANDS
- FLOW DIRECTION
- cfs = CUBIC FEET PER SECOND
- 15-MILE PATHWAY TERMINUS

ROUTE MARKER

- INTERSTATE ROUTE
- STATE ROUTE

SOURCE: U.S.G.S 7.5 MINUTE SERIES QUADRANGLE(S):-
MOUNT CARMEL, CONN. 1967 (PHOTOREVISED 1984)
NEW HAVEN, CONN. 1967 (PHOTOREVISED 1984)



SURFACE WATER PATHWAY SKETCH

SUBURBAN EXCAVATORS
1074 AND 1076 SOUTH MAIN STREET
CHESHIRE, CONNECTICUT

WESTON SOLUTIONS

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE
03-05-0133	W. SHAW	11/13/02

FILE NAME: S:\03050133\Figures\FIG3.DWG

FIGURE 3

There are no active surface water drinking water intakes along the 15-mile downstream surface water pathway for the Suburban property. However, Lake Whitney is an inactive surface water drinking water intake for the Town of Hamden. It's use was discontinued in 1992 because the 90-year-old treatment plant could not meet current water quality standards [12, p. 15; 59]. A new treatment plant is scheduled to be completed in 2005. At that time, Lake Whitney will become part of the SCCRWA surface water supply system, and could potentially supply drinking water to an estimated 14,587 people [64; 65].

Sensitive environments occurring along the 15-mile downstream surface water pathway include three Clean Water Act (CWA)-protected water bodies, three fisheries (Mill River, Lake Whitney, and New Haven Harbor), and an estimated 6.27 miles of wetland frontage. In addition, there are nine State-listed endangered species habitats and one State-listed threatened species habitat located along the 15-mile downstream surface water pathway [12, p. 15; 52].

Mill River, from the PPE to Lake Whitney, is classified as a B/AA surface water body in the CT Water Quality Criteria (WQC). This classification indicates that the inland surface water may not meet CT WQC for an AA inland surface water classification. AA inland surface waters are designated for existing/proposed drinking water supplies, recreational use, and fish and wildlife habitats. Lake Whitney is classified as a B/AA inland surface water. Mill River from Lake Whitney to its terminus is classified as C/B in CT WQC. This classification indicates that the inland surface water does not meet CT WQC for a B inland surface water classification due to point or non-point source of pollution. Class C/B inland surface waters are designated for recreational use, and fish and wildlife habitats. New Haven Harbor is classified as SD/SB. This classification indicates that the surface water does not meet CT WQC for a SB coastal and marine surface water classification due to point or non-point source of pollution. SB coastal and marine surface waters are designated for marine fish and wildlife habitats, shellfish harvesting, and recreational use [31; 35]

Table 6 summarizes sensitive environments along the 15-mile downstream surface water pathway from the Suburban property.

Table 6

Sensitive Environments Along the 15-Mile Downstream Surface Water Pathway from Suburban Excavators

Sensitive Environment Name	Sensitive Environment Type	Surface Water Body	Downstream Distance from PPE (miles)	Flow Rate at Environment (cfs)
State-Endangered Species Habitat	State-Endangered Species	Mill River	3.94	25.9 to 75.1
State-Endangered Species Habitat	State-Endangered Species	Mill River	4.71	25.9 to 75.1
State-Endangered Species Habitat	State-Endangered Species	Lake Whitney	11.46	75.1 to 85.9

Table 6

Sensitive Environments Along the 15-Mile Downstream Surface Water Pathway from Suburban Excavators (Concluded)

Sensitive Environment Name	Sensitive Environment Type	Surface Water Body	Downstream Distance from PPE (miles)	Flow Rate at Environment (cfs)
State-Endangered Species Habitat	State-Endangered Species	Lake Whitney	11.54	75.1 to 85.9
State-Endangered Species Habitat	State-Endangered Species	Lake Whitney	11.59	75.1 to 85.9
State-Endangered Species Habitat	State-Endangered Species	Mill River	12.50	85.9 to 99.5
State-Endangered Species Habitat	State-Endangered Species	Mill River	12.78	85.9 to 99.5
State-Endangered Species Habitat	State-Endangered Species	Mill River	12.81	85.9 to 99.5
State-Endangered Species Habitat	State-Endangered Species	Mill River	13.14	85.9 to 99.5
State-Threatened Species Habitat	State-Threatened Species	Mill River	11.86	85.9 to 99.5
Mill River	CWA-Protected Water Body	Mill River	0.01 to 9.6 and 11.7 to 14.4	25.9 to 75.1 and 85.9 to 99.5
Wetlands (0.02 miles)	Wetlands	Wetlands	0 to 0.01	< 10
Wetlands (6.0 miles)	Wetlands	Mill River	0.01 to 9.6 and 11.7 to 14.4	25.9 to 75.1 and 85.9 to 99.5
Wetlands (0.25 miles)	Wetlands	Lake Whitney	9.6 to 11.7	75.1 to 85.9

cfs = Cubic Feet per Second.
CWA = Clean Water Act.
PPE = Probable Point of Entry.

[1-4; 12; 13; 17; 24-27; 29; 34; 36; 58]

On 20 January 2003, START personnel collected 10 sediment samples (SD-01 through SD-10) from nine locations within the on-site wetlands and along Mill River, located east of the Suburban property. Sediment sample SD-01 was collected from the west bank of Mill River, approximately 100 ft downstream of the location where the on-site wetland discharges into Mill River. Sediment samples SD-02 and SD-03 (duplicate) were collected from the west bank of Mill River, approximately 50 feet upstream of SD-01. Sediment sample SD-04 was collected from the west bank of the Mill River where the on-site wetland discharges into Mill River. Sediment samples SD-

05 and SD-06 were collected from Mill River, approximately 50 ft upstream where the on-site wetlands discharge into Mill River, to document reference conditions for the samples collected from Mill River (SD-01 through SD-04). Sediment sample SD-07 was collected from the on-site wetland at the PPE for the Suburban property. Sediment sample SD-08 was collected from the on-site wetland, approximately 150 ft northeast of the PPE. Sediment samples SD-09 and SD-10 were collected from an off-site wetland, approximately 50 ft upstream of where the on-site wetland discharges into Mill River, to document reference conditions for the sediment samples collected from the on-site wetlands (SD-07 and SD-08) [14, pp. 18-22].

All the sediment samples were submitted to a predesignated DAS laboratory for VOC, SVOC, pesticide, PCB, TAL metal, and cyanide analyses, with the exception of SD-06 and SD-10, which were analyzed for TAL metals only [14, pp. 18-25]. Table 7 summarizes START sediment samples collected on 20 January 2003.

Table 7

Sample Summary: Suburban Excavators
Sediment Samples Collected by START on 20 January 2003

Sample Location No.	Traffic Report No.	Time (hours)	Remarks	Sample Depth (inches)	Sample Source
MATRIX: Sediment					
SD-01	D10542	1030	Grab	0 to 6	Sediment sample collected from the west bank of Mill River, approximately 100 ft downstream of where the on-site wetlands discharge into Mill River (41° 28′ 32.0″ N, 72° 54′ 13.3″ W). Material is dark brown, medium-to-fine SAND, little silt. pH = 7.11; T = 0.7°C; Conductivity = 154 μS; FID and PID = 0 units above background.
SD-02	D10543	1130	Grab	0 to 6	Sediment sample collected from the west bank of Mill River, approximately 50 ft upstream of SD-01 (41° 28′ 34.6″ N, 72° 54′ 14.0″ W). Material is dark brown, fine SAND, little silt, trace organics. pH = 7.75; T = 1.1°C; Conductivity = 157.1 μS; FID and PID = 0 units above background.
SD-03	D10544	1130	Grab	0 to 6	Duplicate of SD-02, collected for quality control.
SD-04	D10545	1215	Grab	0 to 6	Sediment sample collected from the west bank of Mill River where the on-site wetlands discharge into Mill River (41° 28′ 35.9″ N, 72° 54′ 15.8″ W). Material is dark brown, fine SAND and SILT, trace organics. pH = 7.34; T = 1.3°C; Conductivity = 162.8 μS; FID and PID = 0 units above background.
SD-05	D10546	1430	Grab	0 to 6	Sediment sample collected from the west bank of Mill River, approximately 50 ft upstream of where the on-site wetlands discharge into Mill River, to document reference concentrations (41° 28′ 37.2″ N, 72° 54′ 17.9″ W). Material is light brown, fine SAND and SILT, trace medium gravel. pH = 6.47; T = 1.6°C; Conductivity = 165 μS; FID and PID = 0 units above background.

Table 7

Sample Summary: Suburban Excavators
Sediment Samples Collected by START on 20 January 2003 (Concluded)

Sample Location No.	Traffic Report No.	Time (hours)	Remarks	Sample Depth (inches)	Sample Source
MATRIX: Sediment (Concluded)					
SD-06	D10547	1445	Grab	0 to 6	Sediment sample collected from the west bank of the Mill River, approximately 50 ft upstream of where the on-site wetlands discharge into Mill River, to document reference concentrations (analyzed for metals only) (41° 28′ 37.2″ N, 72° 54′ 18.0″ W). Material is light brown, fine SAND and SILT, trace medium gravel. pH = 6.64; T = 1.3°C; Conductivity = 163 μS; FID and PID = 0 units above background.
SD-07	D10548	1315	Grab	0 to 6	Sediment sample collected from the on-site wetlands at the PPE (41° 28′ 34.1″ N, 72° 54′ 17.0″ W). Material is dark brown, fine SAND, some clay, some silt, trace medium gravel. There was no water in the boring hole; therefore, pH, T, and Conductivity = NR. FID and PID = 0 units above background.
SD-08	D10549	1245	Grab	0 to 6	Sediment sample collected from the on-site wetlands (41° 28′ 34.9″ N, 72° 54′ 16.4″ W). Material is black SILT, some clay, trace organics. pH = 5.95; T = 0.9°C; Conductivity = 129.3 μS; FID and PID = 0 units above background.
SD-09	D10550	1500	Grab	0 to 6	Sediment sample collected from off-site wetlands, approximately 50 ft upstream from where the on-site wetlands discharge into Mill River, to document reference conditions (41° 28′ 37.7″ N, 72° 54′ 16.4″ W). Material is black SILT, some clay, little organics. pH = 6.65; T = 1.3°C; Conductivity = 113 μS; FID and PID = 0 units above background.
SD-10	D10551	1515	Grab	0 to 6	Sediment sample collected from an off-site wetland, approximately 50 ft upstream from where the on-site wetlands discharge into Mill River, to document reference conditions (analyzed for metals only) (41° 28′ 37.7″ N, 72° 54′ 16.4″ W). Material is black SILT, some clay, little organics. pH = 6.06; T = 1.7°C; Conductivity = 111 μS; FID and PID = 0 units above background.

NR = Not Recorded.
N = North Latitude.
W = West Longitude.
T = Temperature.
°C = Degrees Celsius.
μS = Micro Siemens.
FID = Flame Ionization Detector.
PID = Photoionization Detector.
ft = Feet.
No. = Number.
PPE = Probable Point of Entry.

[14]

Table 8 is a summary of organic compounds and inorganic elements detected through DAS analyses of START sediment samples. For each sample location, a compound or element is listed if it is detected at a concentration greater than or equal to three times the reference sample concentration (SD-05 and SD-06, SD-09 and SD-10). However, if the compound or element is not detected in the reference sample, the reference sample's sample quantitation limit (SQL) (for organic analyses) or sample detection limit (SDL) (for inorganic analyses) is used as the reference value. These compounds or elements are listed if they occurred at a value greater than or equal to the reference sample's SQL or SDL and are designated by their approximate relative concentration above these values. The Contract Required Quantitation Limit (CRQL) for endosulfan sulfate was used as the reference value because the reference sample result was rejected when the compound was not recovered in the Performance Evaluation (PE) sample. The CRQL for alpha-chlordane was used as the reference value because the reference sample result was rejected due failed target compound identification criteria [43].

CT DEP has not established standards for sediment quality. For informational purposes only, START compared the sediment sample analytical results to the Massachusetts Department of Environmental Protection (MA DEP) Freshwater Sediment Screening (FSS) Benchmarks. Substances listed in bold text in Table 8 were detected at concentrations that exceeded MA DEP FSS Benchmarks [48].

Complete analytical results of START sediment samples including quantitation and detection limits are presented in Attachment A. Sample results qualified with a "J" on analytical tables are considered approximate because of limitations identified during DAS data validation. In addition, organic sample results reported at concentrations below quantitation limits and confirmed by mass spectrometry are also qualified by a "J" and considered approximate. Sample results qualified with an "EB" on analytical tables indicate the substance was detected in sampling equipment rinsate blank.

Table 8

Summary of Analytical Results
Sediment Sample Analysis for Suburban Excavators

Sample Location	Compound/ Element	Sample Concentration	Reference Concentration	Comments	MA DEP FSS Benchmark
SD-01 (D10542)	**SVOCs**				
	Phenanthrene	**590 ppb**	120 J ppb	4.9 × Ref	204 ppb
	Anthracene	**140 J ppb**	44 J ppb	3.2 × Ref	57.2 ppb
	Fluoranthene	**1,100 ppb**	250 J ppb	4.4 × Ref	423 ppb
	Pyrene	**1,100 EB ppb**	260 J EB ppb	4.2 × Ref	195 ppb
	Benzo(a)anthracene	**660 ppb**	140 J ppb	4.7 × Ref	108 ppb

Table 8

Summary of Analytical Results
Sediment Sample Analysis for Suburban Excavators (Continued)

Sample Location	Compound/ Element	Sample Concentration			Reference Concentration			Comments	MA DEP FSS Benchmark	
SD-01 (D10542) (Concl.)	**SVOCs (Concluded)**									
	Benzo(b)fluoranthene	710		ppb	160	J	ppb	4.4 × Ref		NL
	Chrysene	**790**		**ppb**	190	J	ppb	4.2 × Ref	166	ppb
	Bis(2-ethylhexyl)phthalate	120	J	ppb	34	J	ppb	3.5 × Ref		NL
	Benzo(k)fluoranthene	660		ppb	160	J	ppb	4.1 × Ref		NL
	Benzo(a)pyrene	**710**		**ppb**	180	J	ppb	3.9 × Ref	150	ppb
	Indeno(1,2,3-cd)pyrene	510		ppb	130	J	ppb	3.9 × Ref		NL
	Benzo(g,h,i)perylene	610		ppb	160	J	ppb	3.8 × Ref		NL
	PESTICIDES/PCBs									
	4,4'-DDE	**5.1**	**J**	**ppb**	4.9	U	ppb	1.0 × SQL	3.16	ppb
SD-02 (D10543)	**VOCs**									
	Methyl acetate	60	J	ppb	17		ppb	3.5 × Ref		NL
	SVOCs									
	Acenaphthylene	190	J	ppb	56	J	ppb	3.4 × Ref		NL
	Phenanthrene	**1,200**		**ppb**	120	J	ppb	10 × Ref	204	ppb
	Anthracene	**300**	**J**	**ppb**	44	J	ppb	6.8 × Ref	57.2	ppb
	Fluoranthene	**2,000**		**ppb**	250	J	ppb	8.0 × Ref	423	ppb
	Pyrene	**2,000**	**EB**	**ppb**	260	J EB	ppb	7.7 × Ref	195	ppb
	Benzo(a)anthracene	**1,400**		**ppb**	140	J	ppb	10 × Ref	108	ppb
	Chrysene	**1,700**		**ppb**	190	J	ppb	8.9 × Ref	166	ppb
	Bis(2-ethylhexyl)phthalate	300	J	ppb	34	J	ppb	8.8 × Ref		NL
	Benzo(b)fluoranthene	1,600		ppb	160	J	ppb	10 × Ref		NL
	Benzo(k)fluoranthene	1,400		ppb	160	J	ppb	8.8 × Ref		NL
	Benzo(a)pyrene	**1,500**		**ppb**	180	J	ppb	8.3 × Ref	150	ppb

Table 8

Summary of Analytical Results
Sediment Sample Analysis for Suburban Excavators (Continued)

Sample Location	Compound/ Element	Sample Concentration			Reference Concentration			Comments	MA DEP FSS Benchmark	
SD-02 (D10543) (Concl.)	**SVOCs (Concluded)**									
	Indeno(1,2,3-cd)pyrene	1,200		ppb	130	J	ppb	9.2 × Ref		NL
	Dibenzo(a,h)anthracene	**400**	**J**	**ppb**	42	J	ppb	9.5 × Ref	33	ppb
	Benzo(g,h,i)perylene	1,300		ppb	160	J	ppb	8.1 × Ref		NL
	PESTICIDES/PCBs									
	gamma-Chlordane	**3.8**	**J**	**ppb**	2.5	U	ppb	1.5 × SQL	3.24	ppb
	INORGANICS									
	Lead	**115**		**ppm**	28.8		ppm	4.0 × Ref	35.8	ppm
	Zinc	112		ppm	33.9		ppm	3.3 × Ref	121	ppm
SD-03 (D10544)	**SVOCs**									
	Acenaphthylene	170	J	ppb	56	J	ppb	3.0 × Ref		NL
	Phenanthrene	**1,200**		**ppb**	120	J	ppb	10 × Ref	204	ppb
	Anthracene	**300**	**J**	**ppb**	44	J	ppb	6.8 × Ref	57.2	ppb
	Fluoranthene	**2,100**		**ppb**	250	J	ppb	8.4 × Ref	423	ppb
	Pyrene	**1,800**	**EB**	**ppb**	260	J EB	ppb	6.9 × Ref	195	ppb
	Benzo(a)anthracene	**1,400**		**ppb**	140	J	ppb	10 × Ref	108	ppb
	Chrysene	**1,600**		**ppb**	190	J	ppb	8.4 × Ref	166	ppb
	Bis(2-ethylhexyl)phthalate	280	J	ppb	34	J	ppb	8.2 × Ref		NL
	Benzo(b)fluoranthene	1,500		ppb	160	J	ppb	9.4 × Ref		NL
	Benzo(k)fluoranthene	1,400		ppb	160	J	ppb	8.8 × Ref		NL
	Benzo(a)pyrene	**1,500**		**ppb**	180	J	ppb	8.3 × Ref	150	ppb
	Indeno(1,2,3-cd)pyrene	1,100		ppb	130	J	ppb	8.5 × Ref		NL
	Dibenzo(a,h)anthracene	**380**	**J**	**ppb**	42	J	ppb	9.0 × Ref	33	ppb
	Benzo(g,h,i)perylene	1,300		ppb	160	J	ppb	8.1 × Ref		NL

Table 8

Summary of Analytical Results
Sediment Sample Analysis for Suburban Excavators (Continued)

Sample Location	Compound/ Element	Sample Concentration	Reference Concentration	Comments	MA DEP FSS Benchmark
SD-03 (D10544) (Concl.)	**PESTICIDES/PCBs**				
	gamma-Chlordane	2.9 J ppb	2.5 U ppb	1.2 × SQL	3.24 ppb
	4,4'-DDE	**11 ppb**	4.9 U ppb	2.2 × SQL	3.16 ppb
SD-04 (D10545)	**VOCs**				
	Xylene (Total)	1,200 J ppb	14 U ppb	86 × SQL	NL
	Styrene	910 J ppb	14 U ppb	65 × SQL	NL
	INORGANICS				
	Cadmium	0.84 ppm	0.24 ppm	3.5 × Ref	0.99 ppm
	Calcium	23,800 ppm	3,300 ppm	7.2 × Ref	NL
	Selenium	4.8 ppm	1.4 U ppm	3.4 × SDL	NL
SD-07 (D10548)	**PESTICIDES/PCBs**				
	Endosulfan sulfate	5.6 J ppb	3.3 ppb	1.7 × CRQL	NL
	INORGANICS				
	Cobalt	10.5 ppm	2.8 ppm	3.8 × Ref	NL
	Iron	20,900 ppm	6,240 ppm	3.3 × Ref	NL
	Manganese	731 ppm	64.2 ppm	11 × Ref	NL
	Mercury	**0.28 ppm**	0.02 U ppm	14 × SDL	0.18 ppm
	Cyanide	1.6 ppm	0.16 U ppm	10 × SDL	NL

Table 8

Summary of Analytical Results
Sediment Sample Analysis for Suburban Excavators (Concluded)

Sample Location	Compound/ Element	Sample Concentration	Reference Concentration	Comments	MA DEP FSS Benchmark
SD-08 (D10549)	**INORGANICS**				
	Manganese	205 ppm	64.2 ppm	3.2 × Ref	NL
	Mercury	**0.28 J ppm**	0.02 U ppm	14 × SDL	0.18 ppm

Note: Bolded values indicate the substance concentration exceeds the MA DEP FSS Benchmarks. These standards are not enforceable and have been included for informational purposes only.

Ref = Reference concentration.
J = Quantitation is approximate due to limitations identified during the quality control review.
U = Indicates the substance was analyzed for but not detected. The associated numerical value is the SQL or SDL.
EB = Indicates substance was detected in sampling equipment rinsate blank.
ppb = Parts per billion.
ppm = Parts per million.
PCBs = Polychlorinated Biphenyls.
VOCs = Volatile Organic Compounds.
SVOCs = Semivolatile Organic Compounds.
SQL = Sample Quantitation Limit.
SDL = Sample Detection Limit.
CRQL = Contract Required Quantitation Limit.
MA DEP = Massachusetts Department of Environmental Protection.
FSS = Freshwater Sediment Screening.
NL = Not Listed. A MA DEP FSS Benchmark has not been established for this substance.
Concl. = Concluded.

[43; 44; 48]

Maximum concentrations of substances detected above reference criteria in START sediment samples SD-01 through SD-04, collected from the Mill River, are as follows: methyl acetate (60 J ppb in SD-02); xylene (total) (1,200 J ppb in SD-04); styrene (910 J ppb in SD-04); acenaphthylene (190 J ppb in SD-02); phenanthrene (1,200 ppb in SD-02 and SD-03); anthracene (300 J ppb in SD-02 and SD-03); fluoranthene (2,100 ppb in SD-03); pyrene (2,000 EB ppb in SD-02); benzo(a)anthracene (1,400 ppb in SD-02 and SD-03); chrysene (1,700 ppb in SD-02); bis(2-ethylhexyl)phthalate (300 J ppb in SD-02); benzo(b)fluoranthene (1,600 ppb in SD-02); benzo(k)fluoranthene (1,400 ppb in SD-02 and SD-03); benzo(a)pyrene (1,500 ppb in SD-02 and SD-03); indeno(1,2,3-cd)pyrene (1,200 ppb in SD-02); dibenzo(a,h)anthracene (400 J ppb in SD-02); benzo(g,h,i)perylene (1,300 ppb in SD-02 and SD-03); 4,4'-DDE (11 ppb in SD-03); gamma-chlordane (3.8 J ppb in SD-02); cadmium (0.84 ppm in SD-04); calcium (23,800 ppm in SD-04); lead (115 ppm in SD-02); selenium (4.8 ppm in SD-04); and zinc (112 ppm in SD-02) [43; 44].

Maximum concentrations of substances detected above reference criteria in START sediment samples SD-07 and SD-08, collected from the on-site wetland, are as follows: endosulfan sulfate (5.6 J ppb in SD-07), cobalt (10.5 ppm in SD-07), iron (20,900 ppm in SD-07), manganese (731 ppm in SD-07), mercury (0.28 ppm in SD-07 and 0.28 J ppm in SD-08), and cyanide (1.6 ppm in SD-07) [43; 44].

The following substances were detected at concentrations exceeding applicable MA DEP FSS Benchmarks: phenanthrene; anthracene; fluoranthene; pyrene; chrysene; benzo(a)anthracene; benzo(a)pyrene; dibenzo(a,h)anthracene; gamma-chlordane; 4,4'-DDE; lead; and mercury [43; 44; 48].

MA DEP FSS Benchmarks has not been established for the following substances detected during START sediment sampling: methyl acetate; xylene; styrene; bis(2-ethylhexyl)phthalate; acenaphthylene; benzo(b)fluoranthene; benzo(k)fluoranthene; indeno(1,2,3-cd)pyrene; benzo(g,h,i)perylene; endosulfan sulfate; calcium; selenium; cobalt; iron; manganese; and cyanide [43; 44; 48].

Of the substances detected above reference criteria in START sediment samples collected from the Mill River (SD-01 through SD-04), xylene (total) and lead were detected in source/soil samples collected in 2000 by Aaron, and therefore can be attributed to on-site sources. In addition, the following polycyclic aromatic hydrocarbons (PAHs) detected in START sediment sampling are common components of waste oil, which is known to have been stored on the property: bis(2-ethylhexyl)phthalate; acenaphthylene; benzo(b)fluoranthene; benzo(k)fluoranthene; indeno(1,2,3-cd)pyrene; benzo(g,h,i)perylene; phenanthrene; anthracene; fluoranthene; pyrene; chrysene; benzo(a)anthracene; dibenzo(a,h)anthracene; and benzo(a)pyrene [66]. The remaining substances (methyl acetate; styrene; endosulfan sulfate; 4,4'-DDE; gamma-chlordane; cadmium; calcium; selenium; and zinc) are not known to have been used on site and were not detected in Aaron source/soil samples; therefore, they cannot be attributed to the Suburban property. The pesticide and five inorganic substances (endosulfan sulfate, cobalt, iron, manganese, mercury, and cyanide) detected in START sediment samples collected from the on-site wetland (SD-07 and SD-08) are not known to have been used on the property and were not detected in source/soil samples collected on the property in 2000 by Aaron. Therefore, these substances can not be attributed to the Suburban property.

START collected sediment samples as part of the Suburban SR. No other surface water pathway sampling is known to have been conducted in relation to the Suburban property. Based on START analytical results, a release of hazardous substances to the Mill River from on-site sources has been documented. As a result of the release, a CWA-protected water body and a fishery have been impacted. To date, no known actions have been taken to address the release of hazardous substances to Mill River.

SOIL EXPOSURE PATHWAY

The Suburban property is bordered to the west by a shopping center, to the south a motel, to the east by residences and Mill River, and to the north by a wetland area and Mill River. Structures on the Suburban property include a one-story commercial building on Lot No. 170 and a two-story garage

and office building on Lot No. 171 [1; 14, pp. 5-8]. An estimated 3,221 people reside wihtin 1 radial mile of the property. There is no information regarding the number of full-time employees on the property. No schools or day-care facilities are located within 200 ft of the property. The nearest school, Cheshire High School, is located approximately 1 mile north of the property [37]. Pedestrian and vehicular access to the property is unrestricted [14, p. 10].

According to the Soil Survey of New Haven County, Connecticut, soil on the Suburban property is described as "urban." An "urban" designation indicates areas that are covered by buildings, paved roads, and parking lots [28, p. 55, Map No. 28]. According to soil boring logs created by Aaron for the 2000 soil and groundwater assessment, soil on the property consists of sand and gravel [8, Appendix 2].

On 25 May 1982, Baron collected soil samples from four test pits (Test Pit No. 1 through Test Pit No. 4) excavated on Lot No. 171. The test pits were excavated to a depth of 14 ft, filled with 2 to 3 cubic yards of 1-inch crushed stone around a 4-inch perforated PVC pipe, and were then backfilled by Suburban. Baron collected two soil samples each from Test Pit No. 1 (between 4 and 18 inches), Test Pit No. 2 (between 4 and 31 inches), and Test Pit No. 3 (between 4 and 18 inches). Baron collected one soil sample from Test Pit No. 4 (15 inches). The soil samples were analyzed for VOCs by Baron Analytical. None of the soil samples collected contained VOCs above the laboratory detection limit of 15 ppb [11].

START did not perform surface soil sampling as part of the Suburban SR. Based on available data, no release of hazardous substances to surface soils from on-site sources has been documented. Furthermore, based on site observations and conditions, and the fact that the majority of the property is covered by asphalt-paving or buildings, no impacts to nearby populations are known or suspected.

AIR PATHWAY

Structures on the Suburban property include a one-story commercial building on Lot No. 170 and a two-story garage and office building on Lot No. 171. The nearest residence is located on Lot No. 172 at 1080 South Main Street, along the eastern border of Lot No. 171. No schools or day-care facilities are located within 200 ft of the property. The nearest school, Cheshire High School, is located approximately 1 mile north of the property. There are two part-time employees working on Lot No. 171 at Timberline Office Products [1; 14, pp. 5-8; 37; 54]. There is no information available regarding the number of full-time employees working on the Suburban property.

The population within 4 radial miles of the Suburban property was estimated using equal distribution calculations of U.S. Census CENTRACTS data identifying population, households, and private water wells for "Block Groups" which lie wholly or in part within individual radial distance rings measured from potential sources on the property. An estimated 43,673 people are located within 4 radial miles of the property [21]. Table 9 summarizes the estimated population within 4 radial miles of the Suburban property.

Table 9

Estimated Population Within 4 Radial Miles of Suburban Excavators

Radial Distance from Suburban Excavators (miles)	Estimated Population
On a Source	0
> 0.00 to 0.25	130
> 0.25 to 0.50	521
> 0.50 to 1.00	2,567
> 1.00 to 2.00	8,097
> 2.00 to 3.00	13,109
> 3.00 to 4.00	19,249
TOTAL	43,673

Note: No information is available regarding the number of full-time on-site workers.

[21; 54]

According to information obtained in 1996 from the U.S. Fish and Wildlife Service, EPA, and CT DEP, there are 10 State-listed endangered species habitats, 743 acres of wetlands, and a CWA-protected water body within 4 radial miles of the Suburban property [24-27; 53]. Table 10 summarizes sensitive environments located within 4 radial miles of the Suburban property.

Table 10

Sensitive Environments Located Within 4 Radial Miles of Suburban Excavators

Radial Distance from Suburban Excavators (miles)	Sensitive Environment/Species (status)
> 0.00 to 0.25	5 acres of wetlands
	Clean Water Act-protected water body
> 0.25 to 0.50	20 acres of wetlands
> 0.50 to 1.00	63 acres of wetlands
> 1.00 to 2.00	210 acres of wetlands
	1 State-endangered species habitat
> 2.00 to 3.00	230 acres of wetlands
	4 State-endangered species habitats
> 3.00 to 4.00	215 acres of wetlands
	5 State-endangered species habitats

[24-27; 53]

START personnel conducted ambient air monitoring as part of 20 January 2003 sediment sampling activities on the Suburban property utilizing a PID, a flame ionization detector (FID), and a combustible gas indicator/oxygen (CGI/O_2) meter. No measurements of organic vapors or combustible gases were detected above background concentrations [14, pp. 18-25].

No known laboratory analyzed quantitative air samples have been collected from the Suburban property. Based on a lack of available data, no releases of hazardous substances to the ambient air from on-site sources is known or suspected to have occurred, and no impacts to nearby residential populations or sensitive environments are known or suspected.

SUMMARY

The Suburban Excavators (Suburban) property is located at 1074 (Lot No. 170) and 1076 (Lot No. 171) South Main Street [listed in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database as 1074 South Main Street] in Cheshire, New Haven County, Connecticut (CT). The 1.99-acre commercially owned property is comprised of a 3,700-square-foot (ft^2), one-story commercial building on Lot No. 170, and a 6,500-ft^2, two-story garage and office building on Lot No. 171. Wetlands are located on the northern portion of Lot No. 171. Other structures on the property include a 1,000-gallon fuel oil aboveground storage tank (AST) located on Lot No. 171, and a wooden berm/shelter on Lot No. 171 that contains a 2,000-gallon gasoline AST, a 2,000-gallon diesel AST, and a 1,000-gallon waste oil AST. The property is bordered to the west by a shopping center; to the south by an extension of South Main Street; to the east by a residential property; and to the north by the Mill River and its associated wetlands.

Property use of Lot No. 170 prior to 1977 is unknown. In 1985, a residential dwelling on the property was razed, and the current building was constructed. In 1988, Suburban purchased Lot No. 170 and used the building for instructional training and for storage of landscaping supplies. Property use of Lot No. 171 prior to 1956 is unknown. Lot No. 171 was privately purchased in 1956 for the storage, maintenance, and repair of excavation equipment. These operations included the use of an on-site garage and vehicle washing area. In 1999, InterEquity Capital Partners LP (InterEquity), receiver for First Wall Street Small Business Investment Company (SBIC), obtained ownership of Lot Nos. 170 and 171. In 2000, Lot No. 170 was sold to Orazzan LLC. Since its purchase, Orazzan LLC has leased Lot No. 170 to various retail companies. Lot No. 171 is leased and operated by Napolitano & Wulster Professional Search and Placement (Napolitano), an executive search and placement firm.

In 1981, during routine sampling at Well No. 2 of the South Cheshire Well Field, located 0.6 miles south of the Suburban property along Cooks Hill Road, trichloroethylene (TCE) was detected in a groundwater sample. Well No. 2, a public groundwater drinking water supply well, is operated by the South Central Connecticut Regional Water Authority (SCCRWA). On 19 February 1982, Connecticut Department of Environmental Protection (CT DEP) personnel collected samples of a steam cleaning solvent (Klenzer), a parts cleaner (Savosol) used in the vehicle washing area on Lot No. 171, and samples of wastewater generated in the vehicle washing area. Sample analysis of the Klenzer indicated the presence of carbon tetrachloride, methyl ethyl ketone (MEK), octane, and toluene. Sample analysis of the Savosol indicated the presence of 1,1,1-trichloroethane; TCE; 1,1,2,2-tetrachloroethylene; and ethylene bromide. Sample analysis of the wastewater indicated the presence of butanol, propanol, toluene, and TCE. Reportedly, wastewater from both the garage and vehicle washing area was formerly discharged into a dry well between 1956 and 1982. On 30 April 1982, CT DEP issued Suburban a Pollution Abatement Order. The Order required Suburban to cease discharging solvent-bearing wastewater to the ground and to investigate potential soil and groundwater contamination on Lot No. 171. In May 1982, Suburban retained Baron Consulting Company (Baron) of Orange, CT, to conduct soil and groundwater sampling on Lot No. 171. On 25 May 1982, Baron excavated four test pits on Lot No. 171 and collected subsurface soil samples, which were analyzed for volatile organic compounds (VOCs). Analytical results indicated that none of the soil samples contained VOCs. Water samples were collected from standing water in each test pit on three occasions in 1982. Analysis of the water samples indicated the presence of TCE (on

three occasions) and chloroform (on one occasion). In 1986, Suburban connected its vehicle washing area discharge flows to the Town of Cheshire sanitary sewer following the installation of a buried oil/water seperator below the floor drain in the vehicle washing area. In 2000, Aaron Environmental, Inc. (Aaron) of Plantsville, CT, initiated a soil and groundwater investigation (Phase II) of Lot No. 171. Analytical results of the subsurface soil samples indicated the presence of several VOCs, semivolatile organic compounds (SVOCs), and metals above Ground Water Pollutant Criteria (GWPC) established by CT DEP. Analytical results of the groundwater samples indicated the presence of Extractable Total Petroleum Hydrocarbons (ETPHs); methylene chloride; cis-1,2-dichloroethene; benzene; toluene; total xylene; n-propylbenzene; 1,2,4-trimethylbenzene; p-isopropyltoluene; and n-butylbenzene at concentrations above GWPC.

Previous investigations at the property include 1982 CT DEP investigations; 1982 groundwater and subsurface sampling investigations by Baron; a 1986 Preliminary Assessment (PA) by the NUS Corporation/Field Investigation Team (NUS/FIT); a 1990 Screening Site Inspection by NUS/FIT; a 1997 Site Inspection Prioritization (SIP) by Roy F. Weston, Inc., Superfund Technical Assessment and Response Team; a 2000 Phase I and Phase II Investigation of Lot Nos. 170 and 171 by Aaron Environmental; and a 2003 Site Reassessment (SR) by Weston Solutions, Inc. (formerly known as Roy F. Weston, Inc.) Superfund Technical Assessment and Response Team 2000 (START).

Depth to groundwater occurs between approximately 3 and 10 feet (ft) beneath the Suburban property, and groundwater flow direction is south/southeast. An estimated 101,755 people are served by public or private groundwater drinking water supply wells located within 4 radial miles of the property. The nearest public groundwater drinking water supply well, located within the South Cheshire Well Field, is located approximately 0.3 miles south of the Suburban property and serves an estimated 15,148 people. The location of the nearest private groundwater drinking water well is assumed to be within 0.25 radial miles of the Suburban property; however, the exact location is not known. In 2000, Baron collected groundwater samples from Lot No. 171. Analytical results indicated the presence of VOCs, SVOCs, and metals above GWPC. Based on analytical results of groundwater samples collected from the Suburban property, groundwater beneath the property has been impacted by a release of hazardous substances that may be partially attributable to on-site sources. Analytical results of drinking water samples routinely collected from the South Cheshire Well Field have indicated no VOC contamination. As a result, no nearby drinking water sources are known or suspected to have been impacted by the potential release from on-site sources.

Stormwater runoff from Lot Nos. 170 and 171 flows east into an on-site wetland located on the northern portion of Lot No. 171. The on-site wetland discharges to Mill River. Additional surface water bodies along the 15-mile downstream surface water pathway include Lake Whitney and New Haven Harbor. There are currently no active surface water drinking water intakes located along the surface water pathway. Sensitive environments located along the surface water pathway include a Clean Water Act (CWA)-protected water body, three fisheries, an estimated 6.25 miles of wetland frontage, and 10 State-listed threatened or endangered species habitats. START collected sediment samples from wetlands adjacent to Mill River in 2003 as part of the SR. Analytical results indicated the presence of VOCs, SVOCs, and metals that are attributable to on-site sources. As a result, a CWA-protected water body and a fishery (Mill River) have been impacted. To date, no known actions have been taken to address the impacts to Mill River.

The number of full-time employees on the Suburban property is unknown. Pedestrian and vehicular access is unrestricted. The nearest residence is adjacent to the property at 1080 South Main Street, east of Lot No. 171. An estimated 3,221 people reside within 1 radial mile of the property. No schools or day-care facilities are located within 200 ft of any source areas on the property. There are no known terrestrial sensitive environments located on the property. In 1982, Baron collected soil samples from four test pits excavated on Lot No. 171. The samples were analyzed for VOCs. Analytical results of the soil samples indicated no VOCs at a concentration above the laboratory detection limit. As a result, no release of hazardous substances to surficial soils from on-site sources has been documented. Furthermore, based on site observations and conditions, and the planned subsurface soil removal action by Aaron, no impacts to nearby populations are known or suspected.

An estimated 43,673 people reside within 4 radial miles of the Suburban property. Sensitive environments located within 4 radial miles of property include 10 State-listed threatened or endangered species habitats, 743 acres of wetlands, and a CWA-protected water body. No known laboratory analyzed quantitative air samples have been collected from the Suburban property to date. Based on a lack of available data, no releases of hazardous substances to the ambient air from on-site sources is known or suspected to have occurred, and no impacts to nearby residential populations or sensitive environments are known or suspected.

The current status of the Suburban property with CT DEP is "General Accounting Office (GAO) Site-Not Active State Lead." A "GAO Site-Not Active State Lead" designation indicates that the Suburban property, a "potential Superfund site" listed in the 1998 November GAO report entitled "Hazardous Waste: Information on Potential Superfund Sites," has not been addressed under remediation programs administered by CT DEP.

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ATTACHMENT A

SUBURBAN EXCAVATORS
SEDIMENT SAMPLE ANALYTICAL RESULTS
START

Samples collected on 20 January 2003